The magazine for AUSTRALIAN Amateurs

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Amateur Radio

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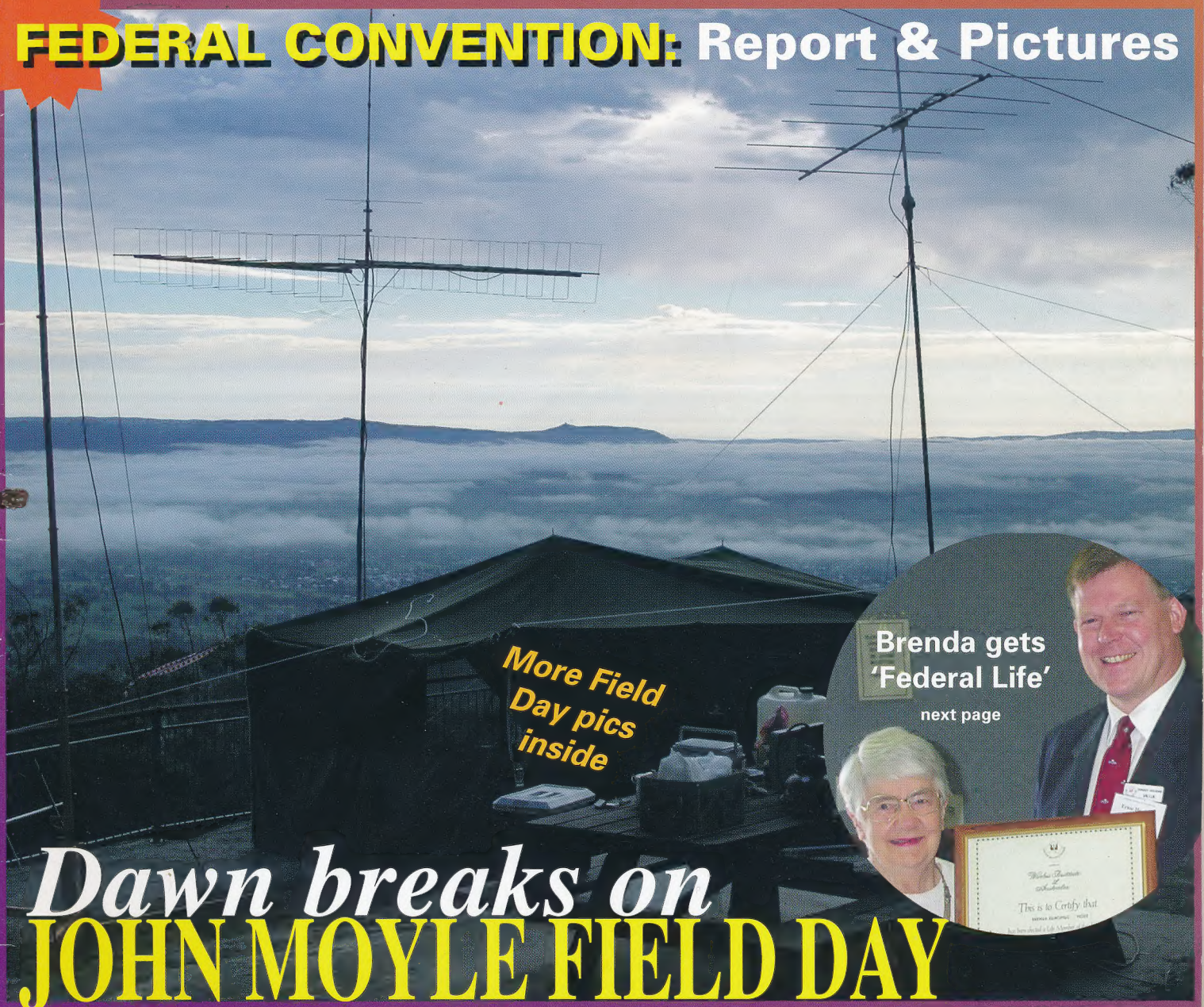
FEDERAL CONVENTION: Report & Pictures



Dawn breaks on JOHN MOYLE FIELD DAY

- *Drew Diamond VK3XU:* A 3 – 30 V : 2 A DC Power Supply –with design notes
- *Malcolm R Haskard VK5BA:* CODAN HF Transceivers Part 2
- *Lloyd Butler VK5BR:* A Crossed Field Loop Antenna for 3.5 MHz

ISSN 0002-6859

Brenda gets Life

Brenda Edmonds VK3KT, fittingly receives the inaugural Institute Award of Honorary Life Membership.

Brenda has served the WIA for more than twenty years at State, Federal and International level and was also Federal Education Officer for 21 years.

The education task means that she is extremely well known and respected throughout the country.

Brenda's nomination was the first put forward by the Honours Committee which was formed last year to assess recommendations for Institute Awards.

The award was greeted with universal and enthusiastic acclamation.

Brenda is still very active in the WIA and is always there when things need to be done, be it high profile like policy forming or the invisible bits of ordinary stuff that make the place run. For instance even the mundane, necessary and thankless task of proofreading this publication falls in part to Brenda.

Well Done.

John Moyle Field Day

And a great time was had by all...

'Shack away from home'

Some had shacks away from home. Jim VK3AEF at work at Tarranginnie, all nicely organised in his slip-on 'trailer-shack'

Another view of the VK3 AEF 'Trailer-shack' with Bill VK3LY (Ex VK3SWD) at the controls.

More on inside back cover

Amateur Radio

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Our Cover this month

"Calling CQ over the mist – VK2SRC at Mt.McKenzie". See pages 18 to 20 for how hams across the country participated in the John Moyle field Day

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at $4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
National Radio Society
Founded 1910

Representing
The Australian Amateur Radio Service

Member of the
International Amateur Radio Union

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Editorial Comment

Colwyn Low VK5UE

Some important decisions made

Well, the WIA Federal Convention has come and gone. Its decisions will influence Amateur Radio in Australia for a very long time. We the Radio Amateurs of Australia and the Australian Communications Authority over the next 12 months or so will make decisions that will see Amateur Radio flourish or die. The convention worked hard to come to agreement on what real changes had to be made to the Hobby we have all been part of, some for several decades, to ensure it will continue. What was realised was that we have to look at to-day's world and pick up the parts of modern communications technology and its use that is the realm of Amateur Radio. It could be that all of this is the area in which Amateur Radio should be active. Maybe we need to call it Non Professional Communications instead of Amateur Radio.

The deliberations of the Convention are summarised in this issue. The main thing I sensed, from the afternoon I was there, is that it has at last been realised that the WIA is a national body and all the State Divisions sink or swim together. It is no longer possible for any Division to stand alone. So it seemed to me the WIA is beginning to act as a Federal body with State Divisions rather than a Federation of State Divisions. After all approximately 75% of member's subscriptions fund the federal WIA driven activities, which service all Amateurs. In some cases that is all Amateurs, not just WIA members. So please when the surveys being distributed by your State Division are received think very carefully about how you answer the questions and remember that maybe the world you got your licence in, is not the world the new recruits to Amateur radio grew up in or live in. Just reflect on how technology in every day use has changed and how education levels in the community have changed.

You will also be aware that Amateur frequency allocations at VHF and UHF are being closely looked at by other services. It is hard to justify holding MHz of spectrum if an Amateur signal is rarely heard on them. HF frequencies have a world wide usage so there are many more possible operators but the VHF and UHF bands have limited coverage within Australia so a reallocation will not affect those off shore. We need to make more use of our allocations to ensure we keep some of them. Think about it, maybe contests do have a place in most Amateurs' activity, if only to stake claims to spectrum space. I had seen a plea before World Amateur Radio Day for every Amateur to make ONE contact. Later I thought it should have been ONE contact on EVERY BAND they had equipment for. May be next year we have an Activity Day on World Amateur Radio Day.

So my closing comment is are we doing enough to keep our frequencies and are we doing enough to interest others in Amateur Radio. One phone call I had this week with a non licenced but communications interested person was that a simpler Entry Level licence would have them try for the licence and they had about 20 friends who would be with them. Then they could set up wireless communication links for their computers. Now that would get some VHF and UHF bands humming !!

73 Colwyn VK5UE

CHANGES TO AMATEUR RADIO MAGAZINE ADMINISTRATION.

The addresses for the submission of material to Amateur Radio Magazine have been changed from this month. The Editor will still receive all material for regular columns and Over To You letters. The Secretary, Publications Committee will receive and acknowledge all Technical and General Articles, All Hamads and all advertising material will be sent to Newsletters Unlimited. The addresses for each of these is given in the column on the left-hand side of page 1.

Ernie Hocking VK1LK
Email: president@wia.org.au

The WIA and a new Foundation Licence

As many of you will have already heard the 2003 WIA AGM was something of a watershed for amateur radio in Australia.

Throughout this issue of AR you will find a number of articles about the AGM. These include a summary of the convention as well as a summary of the current WIA financial position so I will not cover these issues again here. From my perspective the single theme throughout the AGM was the need to revitalise the hobby in order to ensure that it has a successful future. This theme has an impact upon membership, finances, and the ability of the WIA to continue to provide a high standard of service to amateurs here in Australia. In what follows I will set out what I see as the next steps that will unfold as we move to the introduction of an entry level licence aimed at encouraging new interest in the hobby. In trying to predict the future I will however sound a note of caution since in practice the exact sequence of events and the final outcome will be driven by a number of factors outside of our control. The approach I have adopted is to look back as if I was writing in May 2004.

Looking back at the implementation of the Australian Foundation Licence.

"The extensive consultation with the amateur radio community indicated a very high level of support for a licence closely aligned with the UK model. Based on the consultations, the WIA developed a comprehensive proposal outlining the full business case for the introduction of an entry level licence which was presented to the ACA in June 2003. Included in the proposal were suggestions that:

- a radical new approach using a Project Based Learning and assessment process to gain certification of the achievement of proficiency be adopted, and
- that the new licence be known as the "Communicator Licence" in order to reflect the nature of the licence (noting that access to a full experimentation licence was reserved for the existing full call licence).

The timing of the proposal was important since it clearly demonstrated to the ACA the intention of the WIA to seek the new licence before the start of the 2003 World Radio Conference. In June 2003 the ACA also decided to fully devolve all aspects of the examination and education system for amateur radio to the WIA.

Upon returning from WRC 2003 the ACA was faced with a need to implement a number of outcomes. These outcomes included:

- the removal of Morse code testing requirements for the amateur radio licence,
- the adoption of the recommendation to allocate 300kHz to all amateurs in the 7MHz band, and
- a variation to the callsign allocations to permit 4 letter callsigns.

Aware of the WIA proposal for a new entry licence the ACA called a meeting in order to discuss the best approach to resolving all of the issues with a single revision to the legislation. By late August 2003, "in principle" agreement had been reached on the form of the new licence, the new LCD, and changes to the existing amateur radio licences to make them consistent with the outcomes of WRC2003.

AMATEUR RADIO DREAMING:

Wouldn't it be wonderful to look back in 10 years and see one of these new amateurs receive the award of 'Young Australian of the Year' and in her acceptance speech publicly credit amateur radio with having provided the incentive to move into a science career.

Based on this agreement the WIA executive undertook a major letter writing campaign to Government and Industry seeking support for the implementation process. As a result of the campaign significant funding along with practical support was forthcoming. This permitted a number of amateurs to participate on a full time basis in the development of the material and processes required to make the new licence operational in time for the 2004 AGM. Although a major task, the WIA team brought to bear the considerable experience and skill available to it and decided to make the 2004 AGM a flagship event timed to coincide with the launch of the first "Communicator Licence" course. In order to recognise the valuable contributions of Government and Industry it was also decided to link the event to a major amateur radio conference and exhibition. To top the events off the Minister for Communications was invited to attend the final day of the conference in order to present the newly qualified amateurs with their licences. The WIA president when interviewed at the conclusion of the conference was heard to say "Wouldn't it be wonderful to look back in 10 years and see one of these new amateurs receive the award of 'Young Australian of the Year' and in her acceptance speech publicly credit amateur radio with having provided the incentive to move into a science career."

So that is the vision. It is ambitious but achievable. It will be very interesting to look back in 12 months and ask to what extent the vision was achieved. In the meantime I would urge all of you to provide your input into the consultative process that is being conducted over the next month.

So I'll wish you all 73 and look forward to hearing your comments, either directly or via the divisions. All the best in amateur radio

Ernie Hocking VK1LK
Email: president@wia.org.au

ar

the single theme throughout the AGM was the need to revitalise the hobby in order to ensure that it has a successful future. **Ernie Hocking VK1LK, WIA President**

WIA looks to the future

A blow-by-blow observation of the proceedings of the WIA Federal Convention, 2003 **by David Jones VK4OF, Federal Councillor, VK4.**

WIA President, Ernie Hocking VK1LK, welcomed all to the convention, and opened proceedings by thanking the VK5 Division in general, and their President Trevor Quick in particular, for all the logistical help that they had offered in order that the Convention could actually occur. This even extended to personally collecting visitors from the airport, driving them to the Hotel, and returning them to the airport at the end of the Convention.

Ernie commenced his opening address for the Friday afternoon general session with a review of just where the Amateur Radio Service really is in Australia, noting a reduction in new amateurs, and noting what other sister societies had done to arrest this decline, with particular reference to the UK and NZ models. The Friday afternoon was to be devoted to the future of AR in Australia, with no set agenda, and no set topics, but addressing licensing and education as key elements.

Foundation licence has been a positive experience in UK

Ernie noted particularly that the RSGB had done some very important things to improve the public perception of the ARS, and that we should consider these issues as well. To make it easier to understand, we all watched the video address by the visiting President of the RSGB, Bob Whelan. Bob noted the following points considered important by the RSGB:

1. improving the public perception of AR by taking AR to the people in a variety of ways
2. exploiting the opportunities offered by the introduction of a Foundation Licence.
3. actively defending our spectrum ... which aids in preventing the sale of spectrum allocated to the ARS, and
4. keeping the members interested. Since the introduction of the Foundation Licence, most clubs have seen a resurgence in activity among older members, because something new is happening every day.

As a result of the introduction of a Foundation Licence, Bob Whelan noted that the RSGB had seen:

1. a dramatic increase in the volume of retail sales of amateur equipment,
2. the successful candidates staying with the club which sponsored them so that the club actually grew,
3. that with course providers not being the exam invigilators, and with the exams generated as needed on site, the papers necessary for application for licence for successful candidates were immediately available to the potential new amateurs,
4. the RSGB saw an increase in activity in the more dormant members of the club, and
5. an increase in the number of older members upgrading to full licence standard.

So all things considered, the British experience was very positive. Their outcomes would weigh heavily in our discussions, both internally and externally with the ACA.

ARS: a holistic approach?

Ron Smith chaired an in-depth discussion on looking at the ARS in Australia, and showed that just changing licence grades would not be enough. As an example, if we added further grades, and took on licensing, we may need a

The convention, which is the Annual General Meeting of the Wireless Institute of Australia, was held at the Patawalonga Hotel and Motor Inn in Glenelg, South Australia, at 14.40 local time Friday 3rd April. All divisions were represented by a minimum of one Councillor, most divisions had two or three members, and in VK4's case, a Councillor, two Alternate Councillors and an Observer.

The Friday afternoon was a general informal and discussion session, with the formal proceedings to commence on Saturday morning, and concluded Sunday afternoon.

whole new administrative structure to handle it. This holistic approach set the scene for the remainder of the weekend.

After much discussion, the Convention determined our objective to be to increase the number of persons participating in the hobby of Amateur Radio, and that the likely scenario would be the adoption of a licence structure based closely on the RSGB system, being an Entry Level Licence with access to most bands, all modes and using low power, and an Unrestricted Licence. We then closed the proceedings for Friday, April 4th.

Highlights of Saturday, April 5th

- **Address by Treasurer, David Pilley, VK2AYD.** David addressed the matters raised, some in brief and some in detail, so that we could all look at the big financial picture.
- **WIA Publications.** Ernie noted that more and more people these days are relying on electronic means for delivery of material. Discussion included the costs of doing so, vs the reduction in hard copies required, and hence the possible increase in costs to those who remain with hard copy as a result of a smaller print run. It was also agreed that:
  - — VK3 will conduct a trial run by sending the AR .pdf file to members as a test for three months, and would monitor and record aspects such as take-up, costs etc.
  - — the good work of Jim Tregallis be made available. Jim has saved all technical articles for the last five years to CD, and made it searchable. The Exec will implement this aspect.
  - — the Exec would progress the matter of having a summary of all AR magazines for the year, with articles, on a searchable CD, and that this would be available for sale.
- **Divisional Reports.** VK3 and VK4 had circulated copies of their Annual Reports for the Convention, and the other divisional representatives worked from prepared notes.
- **Review of Strategic Plan.** We were introduced to Brian Clarke from VK2. Brian is the convenor and Chair of the Strategic Planning Committee, established by president Ernie. The next hour plus was devoted to a review of our Strategic Plan, and a recognition that we have to plan to encompass more aspects than ever before. This excellent lecture-cum-invocation to hard work lasted more than an hour, and Brian concluded by asking for volunteers to join the committee, preferably a minimum of one per division.
- **AR magazine.** Colwyn Low, the Editor of AR Magazine. The Q and A session that followed was most informative, and helped councillors as well as the Editor.

Further unpresented divisional reports then followed.

- **The implications of Divisional motions.** VK2's motion regarding an entry level licence was first on the agenda. Ernie reminded us all of the conclusion of the Friday session on this matter, best summarised by VK4, which noted support for an entry level licence, with access to most if not all bands, all modes and low power, with no home brew transmitters.

This led to the adoption of the motion that you all heard on divisional broadcasts on Sunday 5th April. This motion was later rescinded on the Sunday in order

General Views of the sessions

The convention Dinner on Friday night at 'The Buffalo'. (Delegates paid their own way)

President Ernie VK1LK thanks AR editor Colwyn VK3UE after the Q & A session on Amateur Radio magazine

to allow the ACA Liaison Team the scope to negotiate a licence condition that supported the initial principles, being access to most if not all bands, with low power, and all modes, but was not so prescriptive as was the initial motion.

The outcome would be that if the WIA's proposals are accepted, the Novice licence would disappear, and the holder of any existing licence would be upgraded to an unrestricted licence. There would be only two classes ... the new restricted entry level, and an unrestricted class that would be the same as our current full licensee. This was easily rationalised on the basis that it takes a person who is starting from scratch, some 16 weeks to prepare for the Novice theory licence, yet only 20 weeks to prepare for the full theory.

- **Press the ACA** for speedy implementation of any outcomes from WRC 2003, to be held in Geneva in June.
- A motion was put regarding the circulation and/or publishing of the exam question banks. This was not seconded and was allowed to lapse, based on information from Education Officer Ron Smith.
- **Final items** involved planning for the 100th Anniversary of the Foundation of the WIA, in Sydney in 1910. This included a very special event callsign, not just from the VI block, but one befitting the first centenary of any society in the world that represents the Amateur Radio Service. And with that, we closed proceedings for the Saturday, concluding at 1730 hrs.

Brenda Edmonds VK3KT is presented with her Life Membership by President Ernie VK1LK

Highlights of Sunday April 6th

- **Brenda Edmonds VK3KT honoured.** Sunday started with yet another deviation from the agenda ... but this one, a very positive and universally supported one. Last year, we agreed to establish an Honours Committee, to assess nominations for Institute Awards, and the first nomination received was that of Brenda Edmonds, VK3KT, for Honorary Life Membership. Brenda's CV reads like a who's who, as one would expect from someone who has served at divisional, federal and international level for more than twenty years. And while she was doing these things, she was also Federal Education Officer for over 21 years. Have a look on the web site for presentation photos. Heartiest congratulations Brenda on a job well done.
- **Revisiting of the motion on the Entry Level Licence.** Substantial debate followed, culminating after lunch with the adoption of an amended motion that was previously foreshadowed, that is, to seek an entry level licence, with low power and access to all modes and a majority of bands and allocations, as distinct from the previous motion which sought access to all bands as a point of policy.

  This may sound simple, and you may ask why these things take so long, but you have to accept that the WIA is democratic. Most importantly, it seeks to ensure that all sectors of the amateur community will have time to comment on the formal proposal that will be put to the ACA by the WIA/ACA Liaison Committee, and that the proposal we adopt and choose to put forward is manageable by the Committee.
- **Presentation of the Annual Financial Report, the Profit and Loss Statement, and the Auditors Report.** From these documents, it was clear that the WIA has to budget for a deficit next year, unless as a minimum, fees rise in accordance with CPI. It was resolved that the federal fee for the 2004 year commencing January 1st, 2004, would be $61.85, which is significantly less than the CPI adjusted figure which received support.
- **Annual Reports.** We spent several hours receiving, reviewing and finally, adopting all the Annual Reports of the various ex-officios of the WIA. There are some 26 of these reports, and while some are a single paragraph, some are more than fifty pages. Nothing is overlooked, no recommendation ignored. We sincerely thank all the ex-officios for their dedication and hard work.
- **Two memorable Silent Keys** of the year, **Bill Gronow**, an Honorary Life member from VK3, and **Rowland Bruce**, a former Federal Councillor from VK5. All members stood in their places in silence for one minute as a mark of respect for these wonderful servants of the Institute and the ARS.
- **Elections** for President and the directors of the Institute, resulting in President Ernie Hocking VK1LK being returned, with David Pilley VK2AYD, Don Wilschefski VK4BY and David Jones VK4OF being appointed as directors, and with Peter Naish VK2BPN being re-appointed Honorary Secretary. Appointment ballots for all the ex-officio positions were then conducted as necessary.
- **Place and timing of next year's Federal Convention.** In keeping with the concept of bringing the WIA to the people, it was generally agreed that the next Convention be in either Canberra or Brisbane, and the two divisions noted would advise a tender in the near future.

- **Awards.** Almost last on the list was the consideration of Institute Awards, as notified. It was unanimously agreed that the Higginbotham Award be presented to Drew Diamond VK3XU, the Technical Award be presented to Dale Hughes VK2DSH, the Ross Hull Award to Glen Neilson VK4TGL, the Ron Wilkinson Award to Doug Mac Arthur VK3UM, and Honorary Life membership, as mentioned, to Brenda Edmonds, VK3KT. Congratulations to all recipients.

And we finally concluded with the usual thank-yous at 16.22 local on Sunday, after what had been a tremendously satisfying federal convention, excellently chaired, and constructively supported by all participants. From my own perspective, this rates as by far the most enjoyable yet also productive of all, and I have been to more than a dozen. I think the reason for this is a maturing of the Institute from one of seven separate shareholders often arguing from their own perspective, to that of one of collective wisdom, and it is this that will carry the WIA and the Amateur Radio Service it represents forward into the future

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The 2003 Executive

L to R: Don Wilschefski VK4BY, Ernest Hocking VL1LK, Peter Naish VK2BPN, David Jones VK4OF, Brenda Edmonson VK3KT, David Pilley VK2AYD

Editor's note:
This report is prepared from David's participation and notes. The official report is of course the Council's minutes of the Convention.

The Federal WIA Accounts

David A. Pilley VK2AYD, Federal Director
davpil@midcoast.com.au

As you have read elsewhere in "AR", the Federal WIA Convention was again a cordial and successful meeting.

How are my subscriptions spent?

I am sure the question has passed through your mind at some time and we hope this overview will provide you with some of the answers. The WIA is not un-similar to our own government. The Federal WIA is the body that bats for you to keep your frequencies and represent you both nationally and internationally. It in turn is supported by the State Divisions who take care of the problems and challenges we are faced with within the States. Each State Division has a Federal Councillor and collectively these Councillors, after discussion with their officers and members, together make decisions and represent you at the Federal Convention.

The year 2002 was not a good year financially. It closed on a loss and the budget for 2003 is not very encouraging either. Membership declined from 4,071 in 2001 to 3,936 in 2002. A drop of 3.3%. However if we look at 1998 we had nearly 5,000 members. Not good!

Our financial position at 31 December 2002 was

Assets	$244,578
Liabilities	$175,470

This shows the Net asset (or Equity) of the Federal WIA as $69,108 which is not a large amount for such a prestigious Institute.

Before discussing the Profit and Loss be aware that approximately 25% of your subscription is passed to the State Divisions to administer their local needs. The Profit and Loss Statement shows how the federal componenet of your subscription is used (about 75% of the full WIA Subscription).

In brief:

Income:	$AUS
Membership subs	177,576
Call book and Exams	23,640
Other incomes	55,184
	256,400
Expenses:	
"AR" Magazine	136,206
Convention	11,552
IARU/Intl	10,937
Office staff etc	49,201
Call book and Exams	12,359
Utilities	12,258
Audit & Bank charges	6,392
Insurance	6,901
Other expenses	13,146
	258,952
Net Income (Loss)	(2,552)

Some explanations are in order.

"Other incomes" include such items as Advertising in "AR", Sales of "AR" at Newsagents and Interest. We desperately need more advertising in "AR".

"Other expenses" are general office expenses such as printing and stationery, etc.

"Utilities" are Rent, Telephone, etc.

The Budget presented for 2003 also showed another loss. During the year we will be funding representatives to the WRC2003 and the Region 3 IARU conference. It all costs money. During the Convention there were suggestions of only running "AR" 6 times a year (we have already reduced copies from 12 to 11, December/January being combined). This was defeated, as the thought of receiving information that was 3 months old would not sit well with the members. For the year 2004 it is anticipated that subs will rise by about $4 a year, equal to the CPI index. But this isn't the answer. Our membership is less that 25% of the total Amateur population in Australia. We need more members and we ask you, can you help? National and International representation is essential to our hobby and we can't do it efficiently on a shoestring. Our President and the Executive are open for discussion any time.

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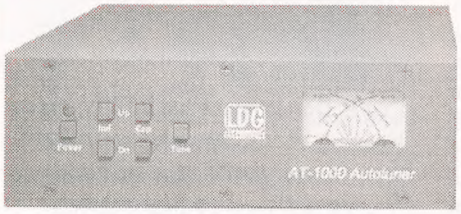

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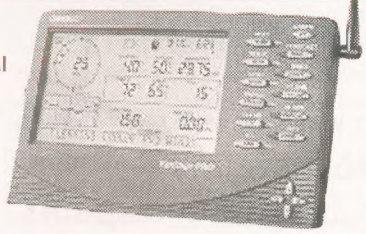

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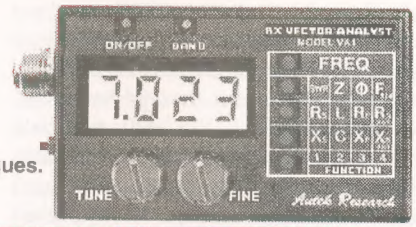

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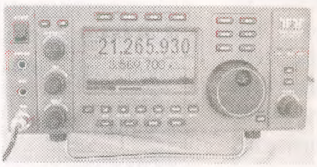

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A 3–30 volt, 2 ampere DC Power Supply

– with design notes

Drew Diamond, VK3XU,
45 Gatters Road,
Wonga Park, 3115.

No matter how many dc power supplies are built or acquired by the radio/electronics enthusiast, there always seems to be some new application that demands a higher (or lower) voltage or current. Generally, a voltage range of perhaps 3 to 20 V dc at up to 1 A is sufficient to power the majority of contemporary devices and circuits, and our popular electronics magazines have addressed this need more than adequately.

Increasingly however, and particularly when working with power MOSFETs and similar devices, radio experimenters have found need of a supply of perhaps 25 or 30 V dc. For such work, a current-limit capacity of 2 A should find greater use in the amateur's workshop. The prototype has the following performance:

Voltage Range: 3 to 15, and 15 to 30 V dc.
Current Capacity: Up to 2 A at voltages less than 2 V of maximum.
Load Regulation: Less than 10 mV variation from no-load to rated load.
Ripple and Noise: Less than 10 mV_{p-p}.
Output Protection: Current-limit, short-circuit and reverse polarity.

Circuit

Considerable experimental effort has gone into the development of the prototype model. Initially, in an attempt to reduce cost and complexity, ordinary LM350-T (plastic) and -K (TO-3) 3-terminal regulators were tried. These make excellent fixed or narrow range adjustable voltage regulators. However, when they are used to deliver a greater range of voltages at currents up to (say) 2 or 3 A dc demand, they are considerably less than ideal for a general-purpose bench supply. In order to hold power dissipation within specification, circuitry internal to these devices makes it impossible to obtain anything like the maximum current at the low end of a chosen voltage range. Secondly, and more significantly, when the regulator's current-limit is reached, there is a sudden substantial fall in output voltage (fold-back), which, when developing certain circuits (amplifiers for instance), renders it impossible to sneak up on, or probe the load circuit's boundaries.

In this application therefore, the cheap, popular, easy-to-obtain 723 regulator IC is used. The 723 remains one of the most versatile perennials for power supply work. Without an external pass transistor, the chip alone can only supply 150 mA to the load, and so a preferred 2N3055 is used as series pass element.

Internally generated 7.2 volt reference at pin 6 is dropped to 2.2 volt and applied to the error amplifier non-inverting input (pin 5), thereby setting the minimum output voltage at about 2.7 volt. The error signal, from the voltage divider comprising a 100 Ω, 4.7 kΩ (15 - 30 V range only), 5 kΩ pot and 820 Ω resistor string connected between (+) and (-) output terminals are applied to the inverting input (pin 4). A workable formula for estimating the divider resistor values necessary for other output voltages is shown on the circuit.

The voltage developed at pin 2 with respect to pin 3 determines the current availability (or "limit"). When the positive voltage at pin 2 approaches about 0.5, the supply will go into the constant-current mode, and will not give any greater load current. The current sense resistor is set at 0.25 Ω (4 x 1 Ω ohm in parallel) in order to produce 0.5 V at 2 A.

For the 3 - 15 V range, the rectifier is configured by S2a as a "two-diode-centre-tapped-winding" circuit, and in the 15 – 30 V range, the full 30 V ac winding of the mains transformer is used with a "four-diode-bridge configuration", which yields a no-load voltage of 21 and 42 V dc respectively. Power dissipation in the series pass transistor is thus kept within reasonable limits (the highest normal dissipation being about 2 A X 18 V = 36 W with the output set for 15 V at 2 A on the 15 - 30 V range). S2b configures the voltage divider string to give an output voltage of 3 - 15 V by shorting the 4.7 k resistor.

A reverse connected 6 A diode is fitted across the output terminals to absorb "kick-back" energy from inductive loads, and a second diode is wired in series with the positive output lead to prevent external voltages from reaching the regulator and pass transistor (should mains power be removed whilst charging batteries for instance) which may otherwise damage these devices.

High frequency stability is obtained by inclusion of the 470 pF capacitor between pins 4 and 13, and a 4.7 µF between pin 3 and pin 7. The (+) and (-) terminals are by-passed with a 100 nF monolithic capacitor to discourage external HF signals from entering the supply.

Let me now discuss the choice of the major components in turn; power transformer, rectifier diodes, filter (or reservoir) capacitor(s), pass transistor and heat-sink.

Power Transformer

According to Ref 1 (p8-4), transformer secondary winding RMS current is 1.2 x dc load current for the "two-diode-centre-tapped" circuit, and up to 1.8 x

dc load current for the "four-diode-bridge" circuit. In this instance the secondary measures 1.3 times the load current. Having decided upon a load current capacity of 2 A, our transformer must therefore have a current rating of 1.3 X 2 = 2.6 A.

Because of the number of variables, the exact formula to calculate the needed secondary voltage (Ref 1, p8-4) is rather unwieldy, and takes in factors such as rectifier diode drop, AC mains tolerance and ripple voltage (but neglects winding losses). Never the less, some empirical hints are offered here.

An achievable (and generally accepted) ripple voltage across the filter capacitor under load (discussed later) for low-voltage/moderate current supplies (like this one) is about 3 V_{p-p}, and for the regulator/pass transistor to function we need a "headroom" or reserve of about 3 V (ie. the instantaneous raw input dc voltage should always be at least 3 V higher than the wanted dc output voltage). On the 3 - 15 V dc range the filter capacitor will charge to 1.4 x 15 = 21 V no-load. With a 2 A load the ripple "trough" may in practice dip as low as 17 V instantaneous, which is only 2 V higher than the required output voltage, so a 15 V (15-0-15) winding should be just adequate under correct mains voltage conditions and at about half the rated output current. However, when the output is set just a volt or two below 15 V dc (or 30 V dc), full rated current is obtainable.

Briefly, we need a winding V ac RMS that is equal to the maximum regulated dc output voltage, but only about half the rated current will be available before "ripple break-through" occurs. When the output is set for just a volt or two (say 13 or 28 V dc) below maximum V dc the rated current may be had. An 18-0-18 V ac winding would offer a greater margin in this instance (particularly for mains "brown-outs"), but then a more costly transformer would be required, and power dissipation would also be greater.

Looking through some electronics catalogues we find a generic type 2170; 0-15, 0-15 V ac rated 6A. We must be careful here, because the transformer's power rating is 100 VA, and 30 X 6 = 180 VA. Hence the 6 A rating applies when the two 15 V ac windings are connected in parallel (15 x 6 = 90 VA). The 2170 is therefore a 3 A transformer when the windings are connected in series, which nicely suits this application.

Rectifier Diodes

As noted above for the transformer current rating, diode current will be about 1.2 times the load current for the "two-diode" configuration, and up to 1.8 times the load current for the "four-diode" circuit. 3 A diodes would therefore be marginal, and so 6 A diodes, or a 6 or 10 A bridge is indicated. The cost of four 6 A/400 V diodes is about the same as a bridge. However, individual diodes are a help in any future troubleshooting task, as a carefully applied, calibrated finger tells us if any one of the diodes appears faulty (they should all be about the same temperature).

Filter Capacitor(s)

Peak to peak ripple voltage (V_{p-p}) may be calculated from;

$$V_{p-p} = \frac{I}{2 x f x C}$$

Where I is the load current in amperes, f is the frequency, which in our case is 50 Hz and C is in farads (Ref. 2, p46). Re-arranging the formula in order to calculate the capacitance required for 3 V_{p-p} at 2 Ampere load current we get;

$$C = \frac{I}{2 x f x V_{pp}}$$

To express the C term in microfarads, the right-hand side is multiplied by 1,000,000.
Substituting we get;

$$C(uF) = \frac{2000000}{2 x 50 x 3} = 6666\ \mu F.$$

Therefore, as a good 'rule-of-thumb' for low voltage/moderate current power supplies operating from 50 Hz mains we need (in round figures) about 3300 µF/A of load current at 3 V_{p-p} ripple.

Filter capacitor ripple current is about twice the load current (Ref. 1, p 8.6). From catalogue data, one choice may be an 8000 uF/80 V/105 degree C/3.5 A capacitor. We must keep in mind however, that capacitance tolerance for an electrolytic is rather broad. Furthermore, it would be wise to share the ripple current between two capacitors, rather than rely on just one (belt and braces). A more prudent and cheaper option would be two 4700 µF/50 V/105 degree/2.3 A capacitors in parallel. Any larger capacitance than this would be extravagant, and may actually increase secondary current unnecessarily.

Pass Transistor

The worst case "normal" power dissipation is where the output is set for 15 V and the load current is maximum (2 A). The voltage across the pass transistor is 18 V, and so the power dissipated is 2 x 18 = 36 W. The worst abnormal load is a prolonged accidental short-circuit, where the supply goes into current-limit, and almost the full output of the rectifier appears across the pass transistor. In this case the power is 2 x 33 = 66 W. We therefore need a transistor capable of handling (with suitable heat-sink) a power dissipation of at least that, and preferably a bit more for safety margin. The popular and readily available 2N3055 in a TO3 case is rated 115 W, 15 A, 200 degrees C, 100 V, and would be quite satisfactory in this application (but see cautions in Ref. 4).

Heat-sink

A power transistor mounted upon a heat sink is in effect a collection of thermal "joints"- all connected in series. The effective thermal resistance from the actual transistor junction (where the heat is generated) to outside ambient air is the total of the thermal resistance from Junction to Case (jc), the thermal resistance from Case to heat-Sink (cs), and the thermal resistance from heat-Sink to Ambient (sa). The junction temperature is therefore

Tj = Ta + [(jc + cs + sa) X P] (Ref. 2, p313)

where P is the power being dissipated and Ta is the maximum expected ambient temperature. The 2N3055 must dissipate a maximum power of 36 W under worst normal load, as noted above. My workshop (and yours too, I bet) can reach 45 degrees C. Thermal resistance from junction to case (jc) is typically 1.5 degrees C/W. A TO3 transistor mounted with a silicone washer will have a thermal resistance (cs) of typically 0.3 degrees C/W, and a type HH-8566 heat-sink has a thermal resistance of 2.2 degrees C/W. Substituting;

45 + [(1.5 + 0.3 + 2.2) X 36] = 189 degrees C

which is just inside the typical 200 degree maximum temperature for a 2N3055.

According to this calculation, a prolonged accidental short-circuit load

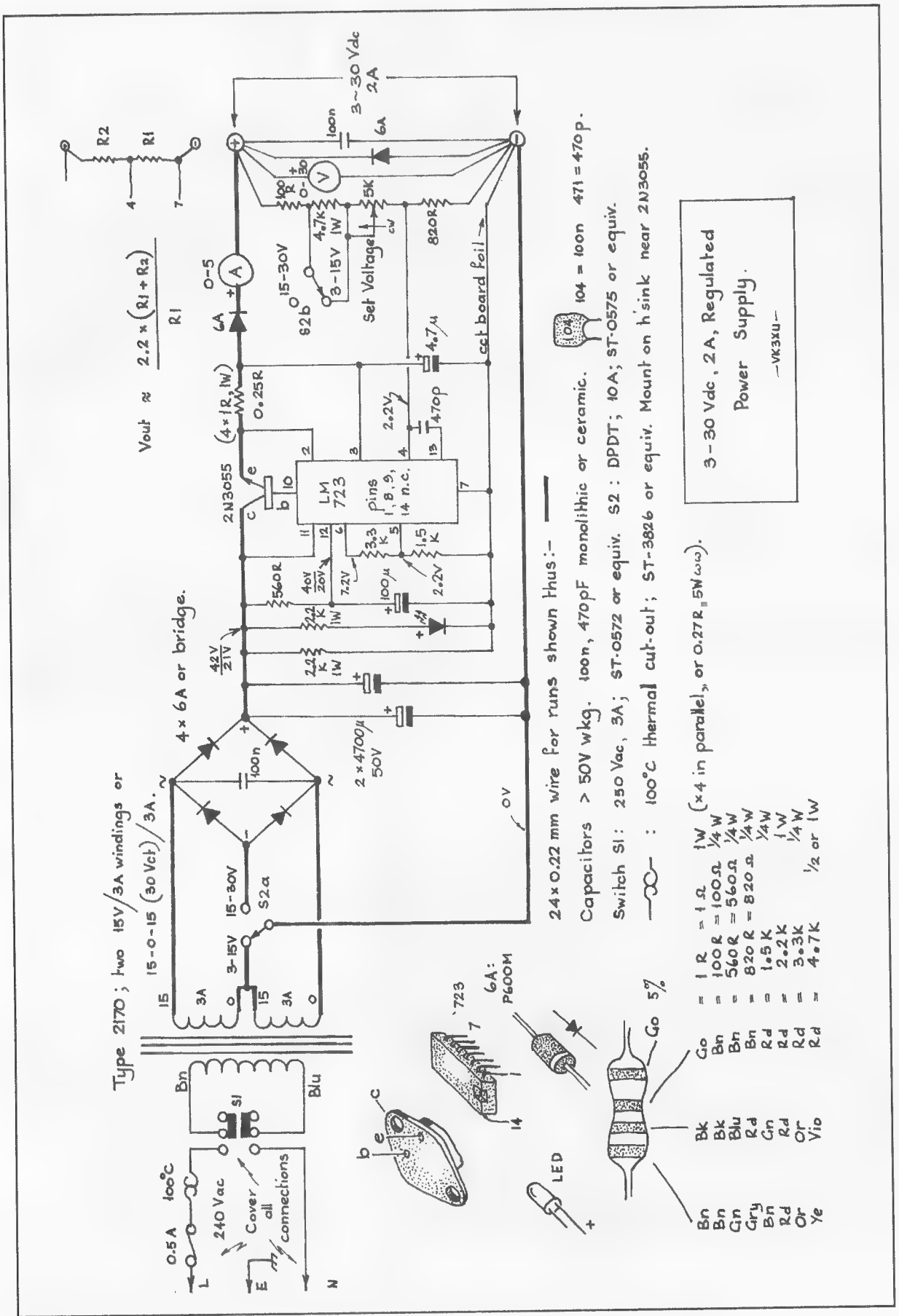
3 - 30 Vdc, 2A, Regulated Power Supply.
—VK3XU—
Type 2170; two 15V/3A windings or 15-0-15 (30 Vct)/3A.
4 x 6A or bridge.
Vout ≈ 2.2 x (R1 + R2) / R1
2N3055
LM 723
Pins 1, 8, 9, 14 n.c.
Set Voltage
cct board foil
24 x 0.22 mm wire for runs shown thus:-
Capacitors > 50V wkg. 100n, 470pF monolithic or ceramic.
Switch S1: 250 Vac, 3A; ST-0572 or equiv. S2: DPDT; 10A; ST-0575 or equiv.
: 100°C thermal cut-out; ST-3826 or equiv. Mount on h'sink near 2N3055.
240 Vac
Cover all connections
LED
6A: P600M
723
Bn Bk Go = 1 Ω 1W (x4 in parallel, or 0.27Ω 5W ωω).
Bn Bk Bn = 100Ω 1/4 W
Gn Blu Bn = 560Ω 1/4 W
Gry Rd Bn = 820Ω 1/4 W
Bn Gn Rd = 1.5K 1/4 W
Rd Rd Rd = 2.2K 1W
Or Or Rd = 3.3K 1/4 W
Ye Vio Rd = 4.7K 1/2 or 1W

Figure 1

will cause the dissipation to exceed the heat-sinking capacity. In practice however, because the heatsink is attached to the rear aluminium panel of the chassis, significant additional heat-sink capacity is obtained. At 35 degrees C ambient my 2N3055 case only reaches 95 degrees C at worst normal load, and 144 degrees C for a prolonged short. For extra safety however, a 100-degree C thermal cut-out switch has been fitted to the heat-sink.

Construction

The homemade ventilated aluminium case/chassis of the prototype measures 200 x 200 x 85 mm, 1.3 mm thickness (Photo 1). Any metal box of similar or larger size would serve.

Most components are accommodated upon a "Paddyboard" style (Ref. 3) main circuit board measuring 80 x 130 mm- foil upwards. Layout is not at all critical, and just about any preferred wiring style should do. The 723 chip is fitted into a 14-pin DIL socket, which is soldered upon a substrate- tracks upwards, made from a 25 mm x 7-strip Vero off-cut (visible in Photo 2). The 'lands' of the substrate must be divided down the middle with a single junior hacksaw cut. The pins of the socket poke through the Vero, so a similarly sized rectangle of plain circuit board should be super-glued between- foil side down of course.

For best flexibility (you may need to power a negative rail device, or series this supply with another), the output "floats" (neither output terminal is grounded), so the main circuit board should be insulated from chassis with fibre or nylon spacers and/or washers.

To achieve excellent regulation, the voltage divider resistors and pin 7 of the 723 should be wired away to the output terminals, as shown on the circuit. There are rather a lot of wire and component connections needed right at the terminals, and it is suggested that a 25 x 45 mm scrap of circuit board- divided with a hack-saw cut, be fitted to their mounting studs.

Ordinary hook-up wire heats up a bit when carrying 2 A, and so heavier wire should be used for those runs shown upon the circuit with thicker lines. To prevent accidental contact, all wiring connections on the mains primary side of the transformer MUST be adequately covered with close-fitting spaghetti or heat-shrink tube.

The heat sink should be attached to the rear panel with fins running vertically for best effectiveness. The 2N3055 is attached with suitable mounting hardware, including silicone washer. Your drilled holes should be de-burred so as not to puncture the washer. If you choose to include the thermal cutout, this part should be mounted upon the heat sink inside the box and immediately above the 2N3055.

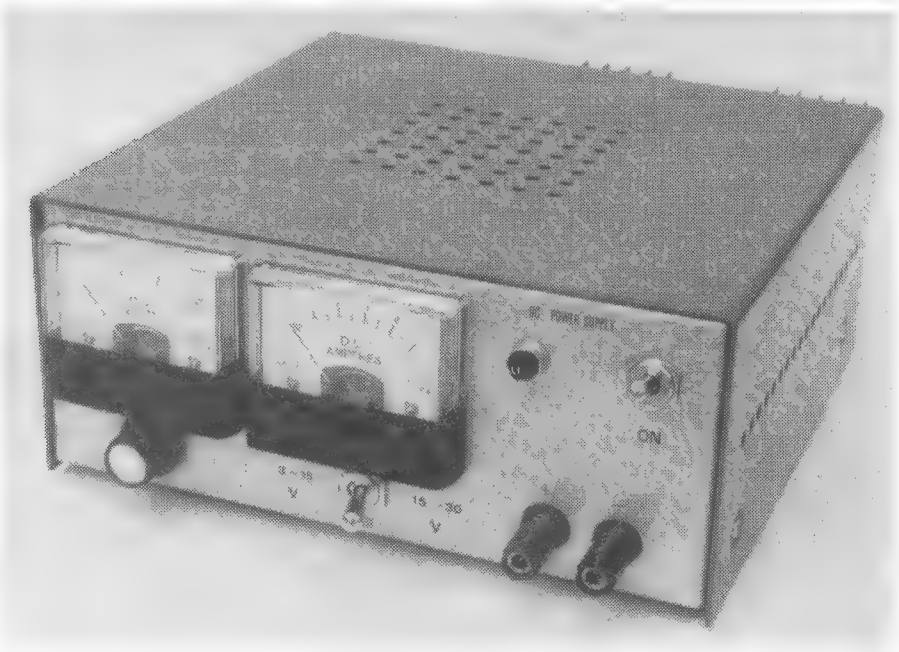

Photo 1. View of the finished power supply

Operation

Check the accuracy of all wiring, parts placement and their polarities. With your multimeter on highest ohms range, test between any terminal and chassis to confirm that no 'stray' grounds have occurred. Remove the 723 from its socket, and then apply mains power. Carefully measure the voltage across the filter capacitor, which should read about 21 V dc with S2 in the 3 - 15 V position, and about 42 V dc in the 15 - 30 V position.

All being well, switch off, wait for the filter caps to discharge (the LED panel lamp will extinguish), and then insert the 723 into its socket. Upon power-on it should be possible to adjust the output voltage through each range.

Obtain some suitably rated wire resistors and apply these as dummy loads upon the output. As noted above, you should be able to draw 2 A (or perhaps a bit more) below 13 V and 28 V output voltage setting. Observe no perceptible drop in output voltage when a load of less than 2 A is applied, proving that the regulator is functioning correctly.

Parts

Without wishing to imply any kind of prejudice, it happens that the prototype was built mainly from Jaycar parts. However, all of the components specified, or close equivalents, are collectively available from our familiar electronics suppliers, including Altronics, DSE., Jaycar and Electronic World.

Metering of a bench supply is strongly recommended. Unfortunately, a more ideal 0 - 3 A meter is not known to be available, and so a QP 5014 (5 A) was used, along with a QP 5022 0 - 30 V dc meter. The type 2170 transformer and HH 8566 heat sink have already been mentioned. The 4700 uF/50 V electro's are RE 6245.

There have been reports of poor power-supply performance with some makes of 2N3055s (eg. Ref. 4). However, devices marked "MOSPEC"- supplied by Jaycar and others have given no trouble in this and several other of my PSU's.

Summary

The experimental radio amateur and/or electronics enthusiast often needs to power various circuits and components during development and repair work.

From experience, it is suggested that a power supply unit with a voltage range of 3 to 30 V dc at up to 2 A should operate the greater portion of contemporary devices.

In addition to offering a tested model, the writer has attempted, by using practical design formulas and guidelines, and working with readily available parts, to explain how each of the major components were chosen, so that a builder may confidently alter the circuit to suit some other application, or parts availability.

References and Further Reading

1. Voltage Regulator Handbook; National Semiconductor Corp.
2. The Art of Electronics; Horowitz & Hill, 2nd Ed., Cambridge University Press.
3. "'Paddyboard" Circuit Construction'; Diamond, AR, Feb. '95.
4. "RS 20 Power Supply- Errata and Notes"; J. Tregallas, VK5JST, AR, Feb. 2003.

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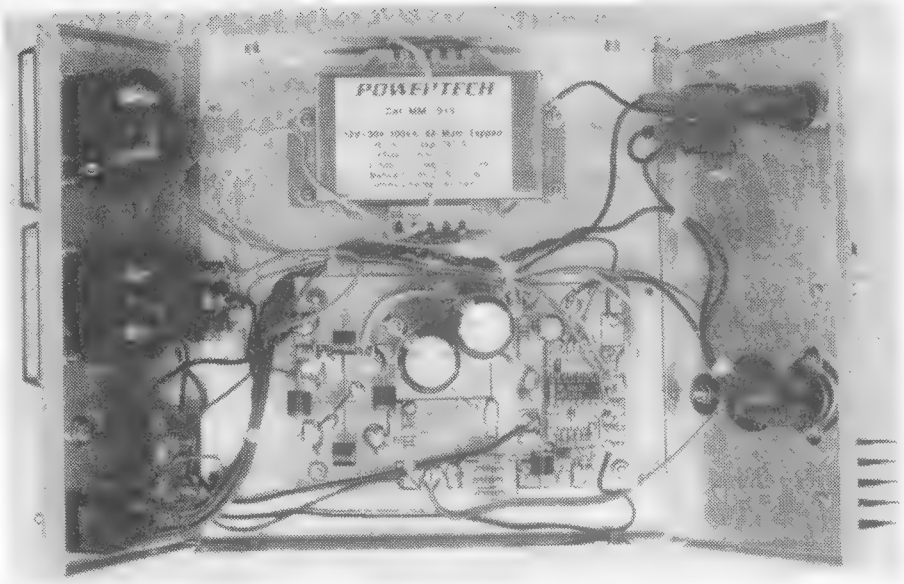

Photo 2. Interior view showing the component layout

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The EH Antenna *Update*

(Refer AR April 2003)

The article published in April AR was prepared in September 2002 and theory included was that as known at that date. A lot of water has passed under the bridge since that time and a lot of controversy has since taken place concerning how it actually works.

For a start, I had observed an anomaly in the original theory of how the H field was developed from the E field displacement current. I have placed an article on the Internet describing a new theory on how I believe this is developed, refer http://www.qsl.net/vk5br/EHAntennaTheory.htm. In brief, I believe that whilst the E field is developed in a differential mode across the cylinders, the H field is developed from the displacement current of a secondary E field in a longitudinal or common mode between the cylinders and reference coax shield common.

More recently it has been observed that there is a field around the outside of the coax running a distance down the coax. Here is the source of the controversy. Some think that much of the radiation is due to current running in this outer shield. Experimental work is continuing to resolve this issue. We will try to keep readers up to date.

Lloyd Butler VK5BR
9-4 03

CODAN HF Transceivers

Part 2

by Malcolm R Haskard (VK5BA)
RSD 1244 Bassnet Road, One Tree Hill, SA 5114.

Codan HF transceiver types (3)

As with most electronic products, where new models are needed every two years or so, a surprising range of transceivers was produced, emphasis always being placed on compactness and performance. Popular types came out as series, later improved versions either a Mark 2 or with a letter added after the four digit type number to signify a change. Significant upgrades included the use of thick film daughter boards, separate control heads, eventually all essential controls truncated to fit on the back of the microphone, frequency synthesis, microprocessor/software control, double conversion receivers, and remote interrogation from another location to ascertain the condition of a set. At least two attempts were made to produce "homestead" style sets (types 7303 and X-2), that is, sets whose appearance fitted in with modern home styling, while the new generation transceivers (NGT) begin to appear a little like a "mobile" phone in styling. In the last decade the transceivers allow attachments, so that facsimile, data transmission, email and such can be sent over the HF link. Table 1 provides a listing of known transceiver sets, while Figure 4 gives examples of several different set styling.

Type No	Use (4)	Style (5)	Comments
6104	P	A	First set. Valve type construction. SS receiver, 455kHz IF, 5 channels, ceramic filters. Two valve transmitter, 8 watt RF. AM only.
6104A	L		As above but 12 channels and in a larger case
6104B	A		Special light weight version of above for light aircraft
6104C	P		Single channel version of above
6104 Mk2	P	A	As 6104 except PCB receiver type 6415 used, 455kHz IF mechanical filter
6201	S		200kHz -18MHz receiver, transmitter 2-9MHz, marine AM set, 455kHz IF, 50 watt RF , Receiver DF loop
6319	M		1.6 - 10 MHz, 1 channel, AM set, 455 kHz IF, 25 watt RF.
6319A	M		As 6319. Minor modifications to the transmitter valve output stage.
6332	P	A	Battery pack. Whip antenna. Type 6415 single PCB SS receiver, 455kHz IF, mechanical filter. Two valve transmitter, 8 watt RF. AM only, 5 channels.
6332A	P	A	As 6332 but 10 channels
6605	B		Base station for EFS (CFS).
6619	P	A	1.6-10 MHz, AM set, 10 channel, 455kHz IF, mechanical filter, Valve output stage, 25 watt RF. B/C receiver built in.
6717	H		1.6 - 10 MHz, Single channel, AM, hand held, 455 kHz IF, mechanical filter, 1 watt RF, internal battery
6801	L	G	Fully solid state. 1650 kHz IF, Output impedance 50 ohm. SSB (normally USB) and AM (H3E). 80 watt RF.
6801-P	B	G	As 6801 but made especially for PNG P & T
6801 Mk2	L, S	G	2-16 MHz. 10 channel. Fully solid state. Thick film modules used. 1650kHz IF. Output impedance 50 ohm. SSB (normally USB) and AM (H3E), 100 watt RF.
6801-S Mk2C	S	B	Marine version 6801 Mk2
6802	B	B	As above, 6801 Mk 2 receiver and exciter, modified transmitter output, 100watt PEP. RTTY and Fax operation
6803	B	B	As 6802 above, but with remote control facilities
6924	P	G	2-10MHz, 10 channel. Fully solid state. 1650kHz IF, 25 watt PEP, SSB (normally USB) and AM (H3E)
6924 Mk2	P	G	2-13MHz, 10 channel. Fully solid state. 1650 kHz IF, 30 watt PEP, SSB (normally USB) and AM (H3E), output impedance 50 ohms (as well as in-built antenna tuner)
6924B	P	B	Same as 6924 Mk2 but new styling
6924C	P	G	2-13 MHz, 25 watt PEP, 10 channel, ruggedised waterproof transceiver
7005	B	G	10 channel, AM and SSB, similar to 6801 Mk 2
7007	B	G	3 channel, AM only transceiver, styling similar 6801
7303	B	G	2-11 MHz, 5 channel, Fully solid state, 1650 kHz IF, 50 watt PEP, SSB (normally USB, and AM (H3E), output impedance 50 ohms, push button operation
7307	B	P	Same as 7515, but in a special plastic case for "Homestead" use - School of the Air and RFDS. Emergency call fitted as standard.
7515	L	G	2-11 MHz, 6 channel initially then increased to 10, fully solid state, 1650kHz IF, 50watt PEP, SSB (normally USB and AM (H3E), output impedance 50 ohms
7727	L	G	Same as 7515 but increased RF power - 100 watt PEP
7727-C	L	G	As 7727 above but cosmetically upgraded. Also available with remote control box and speaker
7727-T	L	G	As 7727 but with remote control
7727-TB	L	B	As above, but cosmetically different again having a digital channel display. Remote control box and separate speaker.
7924-B	P	G	2-13 MHz, 10 channels, solid state, 1650 kHz IF, 25 watt PEP output, SSB (Normally USB) and AM (H3E), ruggedised, water proofed, carry bag, sealed internal battery.

Type No	Use (4)	Style (5)	Comments
7924-C	L	G	As 7924-B above. Option of a hand crank generator.
8121	S		2-13.2 MHz, 10 channels, 60W PEP, AM compatible only on 2182 kHz
8332	H	Y	1.6 - 6 MHz, 2 channel, 1watt PEP. Hand held set.
8525	L	B	2-18 MHz, 99 channels, 20 standard, dual conversion receiver (IFs 45MHz and 1650kHz), frequency synthesis, digital display, SSB, 100 watt PEP
8525-B	L	S	2-24 MHz transmit, receive 250 kHz to 30 MHz, scanning up to 15 channels, SSB, 125 watt PEP, up to 99 channels with 20 standard, 50 ohm impedance, touch membrane controls, available with separate control head type 8530
8525-S	S	S	A marine version above, 2-18 MHz transmit, receive 1.6 -18 MHz, SSB but AM (H3E) on 2182 kHz.
8528	L	S	2-24 MHz transmit, receiver 250 kHz - 30 MHz, up to 600 channels, receiver scanning up to 15 channels, SSB, transmit power variable 25 to125 watt PEP, 50 ohm impedance, touch controls back lit liquid crystal display, available also with separate control head type 8531
8528-S	S	S	As above but marine version. Can have separate control head type 8531S, PEP of 125, 200 or 400 watt
8528-I	L	S	International version of the 8528, having improvements in performance through new software. Identification plate carries a "K" prefix on the serial number.
8727	L	S	2-16 MHz, 10 channels, SSB, 125 watt PEP. Also available separate control head type 8730.
X-2	L	K	2-18 MHz, 10 programmable channels, LSB and USB, speech (Also 9105) processing, audio tones indicate important operating conditions/faults, output variable 25 to 125 watt PEP, dual RF output to match whip or dipole antennas.
9313	L	S	Cut down version of the 8528 for the local market. Synthesised 15 channels, SSB, 100 watt PEP, 2-24MHz transmit, 0.25 - 30 MHz receive, control head type 9320, membrane switches, liquid crystal display
9323	L	B	As for type 9360 except transmitter 100watt PEP and on Australian 27 MHz CB band 10 watt PEP. Control head option is type 9330.
9360	L	S	Synthesised, 400 channels, 10Hz resolution, microprocessor control, SSB, 50 ohm impedance. Receiver 0.25 - 30 MHz, 45MHz and 455 kHz IFs. Transmitter 2-26.5 MHz, 125watt PEP, CW or single tone approx 60% PEP. Control front panel or microphone keypad. Available with control head type 9366. In-built remote diagnostic facility.
9390	S	S	Marine version of the 9360. With Type 4404 power amplifier increase PEP to 400 watt (Type 9390-H). Control head available type 9391.
9480	L	S	Cut down version of 8528 for international market. Synthesised 15 channels with voice scanning, SSB, 2-24 MHz transmit, 100 watt PEP, optional control head type 9482, comprehensive LCD display, new automatic emergency digital calling
9780	L	S	As for type 9360. Supports non-voice applications.
HF1000	A	B	2-14MHz, SSB, 10 channels, 1650 kHz IF, 100W PEP, aviation transceiver, control head panel or rack mounting, digital channel readout
HF2000	A	B	2-16MHz, SSB with AM (H3E) option, 28 channels, 1650 kHz, 100W PEP, aviation transceiver, control head panel or rack mounting, digital channel readout
HF4000	M	B	2-23MHz, 256 channels, marine transceiver, SSB with AM (H3E) on 2182 kHz, digital frequency readout, 150, 200 and 400 watt PEP
2010	L		1.6-30 MHz, 125 watt PEP, SSB and AM (H3E) up to 400 (NGT xx) channels, operated from a remote desk console, supports non voice operations, receiver will tune down to 250 kHz. As a mobile unit needs junction box type 2030 Note; If the xx letters are - AR = Australia (100 watt), SR = System Radio, VR = Voice Radio (15 channels).
NGT	R		2-30 MHz, 500 or 1000 watt PEP, NGT SR remote control, SSB, AM, external control, up to 400 channels

Table 1 Codan transceiver set types and a brief description of them

Notes

3. For detail on other Codan HF products see, Haskard, M R (2002) Radio Waves, "Codan - the era after Traeger Part 2", No. 82, October 2002, Historical Radio Society of Australia, Melbourne, Australia.
4. Use—
   - B = Fixed base use
   - H = Hand held
   - L = Land use both fixed and mobile
   - M = Mobile vehicle operation
   - P = Portable. Has in-built antenna tuning unit
   - S = Marine use
5. Style—
   - A = Grey with military style knobs
   - B = Black painted with white lettering and black knobs
   - G = Green painted (light front panel and dark case) and tear drop knobs. Some of the later sets were painted a very dark blue
   - K = Polycarbonate case, khaki grey front panel, blue top cover
   - PCB = Printed circuit card
   - R = Rack mounted
   - S = Case silver-grey with black or blue panel
   - P = Plastic case with push button switches and tear drop knobs
   - Y = Yellow polycarbonate case/ Black panel with white lettering

continued page 17

G. & C. COMMUNICATIONS

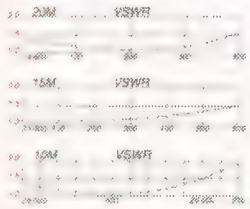
Authorised dealer for ✔Kenwood ✔Icom ✔Barrett RFDS ✔GME Electrophone ✔Uniden ✔RF Industries

TE-33 3 element tri-band yagi antenna

The most popular tri-bander!

Storm proven in Pacific islands.

Excellent performance.



Wide bandwidth, high gain, low SWR, high F/B ratio. Marine grade S/S h/ware. 6063T83 aluminium tube and specially machined heavy duty aluminium brackets.

FULL RANGE OF EMTRON HF ANTENNAS

IC-T90A

50MHz, 144MHz, 430MHz multi band with 0.495-999.990MHz wide band receiver

5W output on 50MHz, 144MHz, 430MHz

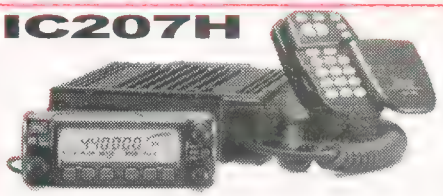
Li-Ion battery

Rugged, compact, Water resist.

Intuitive keypad, DTCS, CTCSS, pocket beep.

555 memory channels (14 high speed)

IC207H



Amateur 2m/70cm FM mobile t/ceiver.

Compact dual band unit with detachable control panel (OPC-600 cable required)

Frequency coverage (Unit: MHz)

VHF: Tx: 144-148 Rx: 118-174 *

UHF: Rx/Tx: 440-450

* Guaranteed 144-148

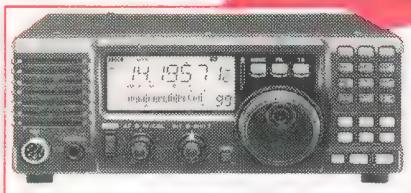
Output power:

VHF 50 W, 20 W, 10 W, 5 W selectable

UHF 35 W, 20 W, 10 W, 5 W selectable

SPECIAL
LIMITED STOCK of these three items. POA

IC-718



Front speaker
Optional DSP
IF shift
RF gain control

Ample CW features
VOX operation
Flexible Filter
High Frequency

Stability (option)
101 memory channels
Simple opertion
Selectable antenna
digital S/RF meter
USB, LSB, CW, RTTY, AM modes all built in

IC-R5

It's here

Small body – Big specs

Big Features

Wideband Receive

0.150-1309.995 MHz

You'll miss nothing

1250 Alpha-numeric channels

Dynamic Memory for easy naming and recocognition

Easy power

AA's, DC, charge while listening

Computer friendly

plug into PC for more features

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HF and UHF Linear amplifiers

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Conclusions

The growth of Codan from the original three who founded the organisation to a staff of over 350 in a period of forty years is a remarkable achievement. Annual turnover now exceeds one hundred million dollars and the Codan name has become a household name, as much as Traeger. Much of this success has been due to hard work in ensuring that products produced were reliable no matter what environment or circumstances. In a small way their contribution to the Australian outback and the electronics industry in general has been recognised by the winning of the Electronic Industries Association Gold Cup and in 1990 Austrade's International Business Achievers Award.

Acknowledgements

In preparing this paper I wish to acknowledge the assistance of Codan Limited and particularly Ian Wall and Jim Bettison, Founding Directors, and Neil Abraham (VK5ZJA), RF Design Manager. Also my grateful thanks for help from Kingsley Hannaford, former Managing Director of Codan; Frank Choate, former employee of Eilco; Peter Leonard, Managing Director of Lencom Antennas Pty. Ltd.; Alan Salisbury, General Manager of Transceiver Services; John Mitchell (VK5JM) former agent for Codan; Steve Ruedger (VK5RU), Andy Gluis (VK5AAQ), Paul Lawson (VK5SL), Ross O'Brien, Rob Gurr (VK5RG), John Mewett, Ron Worden (VK5RW).

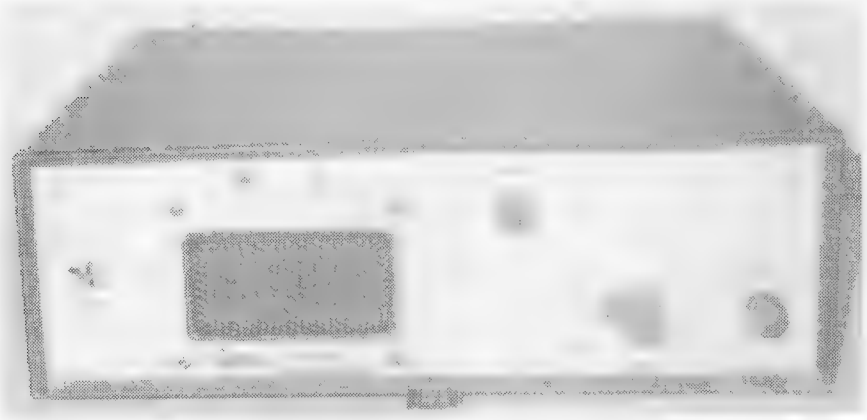


figure 4a

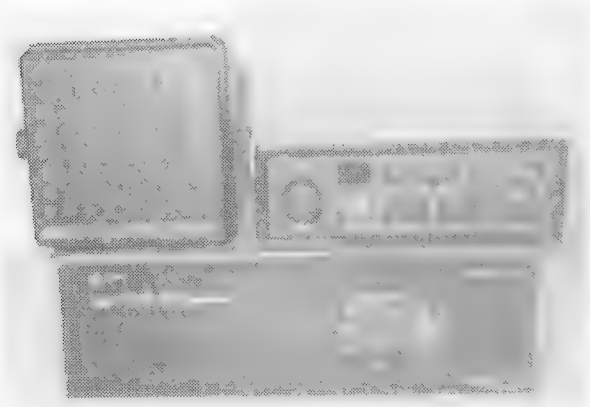


figure 4b

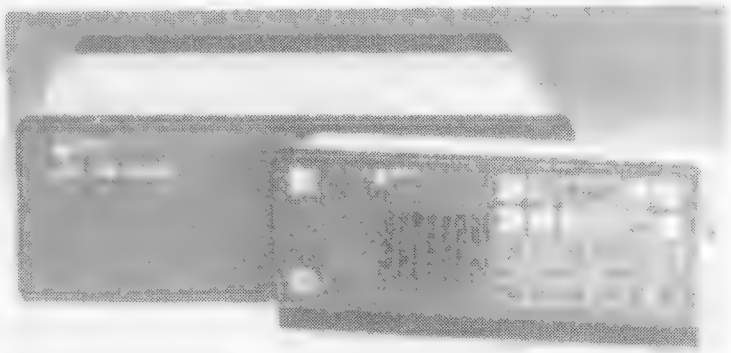


figure 4c

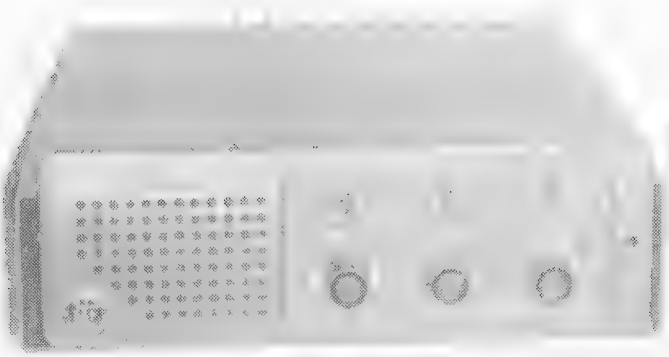


figure 4d

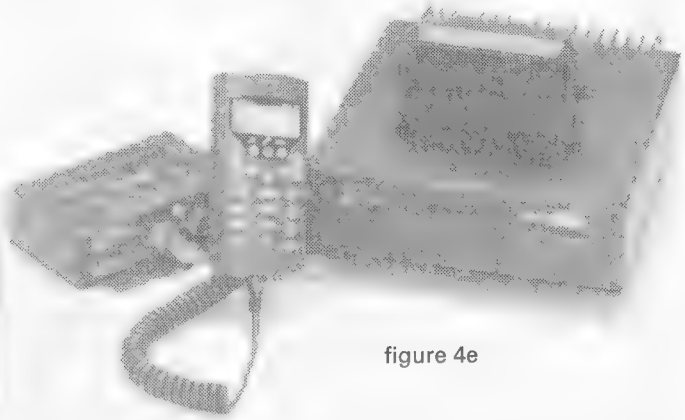


figure 4e

Figure 4. Models showing changes in transceiver styles. Types a) 6801, b) 7727-TB having separate control head, c) 8525 with separate control head, d) the X-2 or 9105 and e) 2010 (NGT) mobile version with junction box

The John Moyle Field Day *across the country*

The editor has put this together from material supplied and extracted from Club Newsletters.

TARCinc

The TARCinc had to relocate their chosen site twice because of road works, rain etc. The final location was at Bluewater Scout Hall to operate VK4WIT portable for the 2003 John Moyle Field Day.

The venue changes certainly made sure that the station crew went well prepared and the first groups of hardy operators showed up at the venue during Friday March 14th. They decided to start the setup on Saturday March 15th to see how quickly they could get a two band portable station up and running.

Saturday March 15th - it took 1 hour from scratch to set up transmitters, lug in batteries and portable lighting, launch 20 m and 15 m dipoles and run coaxial feeds, conduct on-air tests and get the logs ready! The 40 m and 80 m dipoles and coaxial feeds were put in place by class members and newbies to the portable scene (with a bit of roustabout help from more seasoned operators) a few hours later – a valuable bit of portable training!

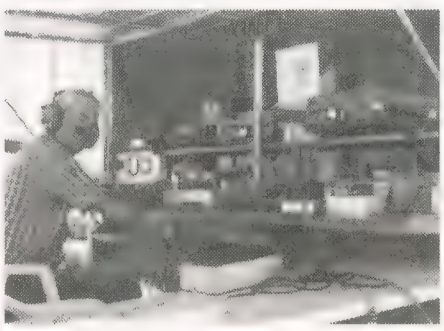
The HF bands were in good form, there were less quiet times than in previous years and everyone had a go on the radios and had a heap of fun. There were in-field repairs to antennae and coaxial feeds undertaken plus some experimental antenna work happening all over the weekend.

By the 0100 Z Sunday 16th March end of the John Moyle Field Day, portable station VK4WIT had racked up a total of 168 contacts (before dupe checking) and had contacted VK4, VK2, VK3, ZL1, VK7, VK5, VK1 and VK8. Most contacts were made on 20 m, then 40 m, followed by 80 m then finally 15 m.

The stuff that John Moyle Field Day Contests are made of - one of the TARC Class Members, Terri, with help from her daughters Rose Marie, Mary Anne and Sarah racked up a page of contacts on 20 metres. With Rose Marie calling out "CQ John Moyle Field Day Contest", Mary Anne and Sarah helping with the logging, Terry conducted each contact to VK8, VK1, VK2, VK4, VK3 and WA6! with increasing confidence as time wore on.

To make sure that we could also contact non field day stations (because we were out there making sure we could contact stations under emergency conditions) VK4WIT also contacted the Sunday morning GNARLY Net operating on 80 m throughout Far North, North and Central Queensland, the Sunday morning VK4 WICEN Net (although net control didn't let us have an over he did acknowledge us) and participated in part of the QNEWS callbacks on regional frequency 7070 kHz. For these contacts we did not ask for contact points nor pester the nets concerned to go elsewhere to make such contacts. We were just there making sure that contact could be made - just in case!

See pictures on inside front and back covers



The station was also visited by some Scouts, Rovers and Venturers, who were on camp at nearby Camp Tarmaroo. Funny, they all said 'JOTA' when they saw the portable station!

Who attended ? Here is the traditional roll call, but forgive me if I forget anyone, not everyone logged into the attendance sheet -

Bob/VK4AAH, Tony/VK4TJS, Bob/VK4WJ, Gavin/VK4ZZ, Iain/VK4IGM, Terri Johnson, Rose Marie Johnson, Mary Anne Johnson, Sarah Johnson, Jeanette Mann, Sheila/VK4PAL, Lyndall/VK4ZM, Ian/VK4ZT, Ken/VK4HAI, Roger/VK4CD and Louise, Phil/VK4HSV & Felix VK4FUQ.

The caretakers of Camp Tarmaroo and the Bluewater Scout Hall said that we were very well behaved and a delight to have on the grounds and that we could come back any time for free! (An offer you can't refuse!)

The packing up of the station just before lunch on Sunday seemed to go the fastest that I can remember, under an hour from station to sweep-up! A hearty lunch in the shade of the Dreamlander capped off a great weekend. I hope everyone had as much fun as I did!

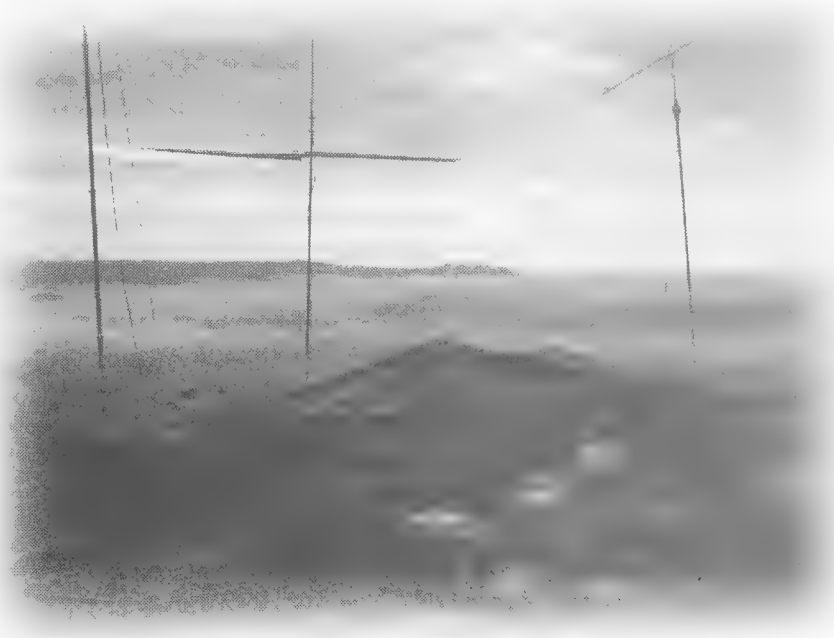
(Gavin/VK4ZZ, itching to go portable again!)

Calling CQ over the mist –

VK2SRC at Mt.McKenzie

by Chris Meagher VK2LCD

It was two days before the start of the 2003 John Moyle contest, and the sky wasn't looking too good for hanging out the washing, let alone conducting a field radio operation. However the Bureau of Meteorology website was forecasting fair weather, so final preparations went ahead for the much anticipated Summerland Radio Club excursion.



Last year we operated from Girard's Hill, West of Drake. Unfortunately that site fell under the 100km mark for a large part of the club member home stations and had a marginal outlook to the east. When it was suggested we go further west, it made sense, and when a suitable site was offered we grabbed the opportunity. The location is Mt.McKenzie, near Tenterfield, birthplace of the Federation. At 1297 metres, it overlooks the town and has a shelter, toilet, BBQ and viewing area, constructed as a joint project by local groups and the National Parks. Access was arranged by club president and local, Bruce VK2KAP. Two of the team did a "reccy" and picked out the right spots, reporting excellent outlook from northwest around to east.

Our aim was to reach into VK4 coast and tablelands as well as getting good coverage of the local VK2s. This time, we would be going for increased directivity on 2 m, using dual 9-element quads, powered from a THP HL-110 V linear. For 6 m, an Icom 746 would run into a 6-element yagi, and for 70 cm, a long beam also using a THP amp. HF would be a relatively small operation using 40 W into a G5RV, tree-slung inverted-V style. Power would be from batteries, 'the monster' home-brew charger, and a small Honda generator.

The day saw three of the group meeting at Casino, gateway to the mountains, in bright sunshine. Beautiful scenery unfolding as we rolled on out west, chatting on the Parrots Nest repeater until we went out of range, then simplex, the lead car warning of dangers ahead as we climbed into the range. A stop at Tenterfield for breakfast, linking up with one more of the party, and on through a landscape of granite boulders to the summit. Soon all the operating team has arrived: Carl VK2XL, Rod VK2HRW, Mark VK2UMA, Rob VK2KGK, and Chris VK2LCD.

With the start two hours away, there's a rush of setting up rigs, batteries, and the SES arrives with a porta-pole, generator and tent. VHF was set-up at the lookout, with HF 50 metres away on a rise to the south, to avoid the break-through that occurred last year. 0100 UTC and VK2SRC portable is on the air, albeit with the tent still being set-up. Everything was working except for a high SWR on 70 cm, causing a swap to a vertical, and uh-oh! major noise problem on HF from the inverter powering the home-brew amp; a swap to a 12 V linear, oh dear a bad power connection. Fortunately Bruce has his new Alinco DX70 still in the box, and out it comes for a serious workout.

Conditions on VHF were not too good early, the contacts came slowly, then late in the day it picked up and Rod VK2HRW was kept busy working well into VK4; the gain of the dual quad was excellent, we were bending the needle on some stations in Brisbane, with about 80 W running on 2 metres FM. 40 metres opened up early and later there was good activity on 80 metres, very little static and lots of chat to old and new acquaintances on the low band.

The team worked solidly into what was an unexpectedly mild night, powered by fish and chips delivered by Bruce from Tenterfield. Late in the evening we were treated to a moonlit view of the town lights and distant glows across the border, and then a spectacular sight of thick fog flowing in from the west, tumbling and churning in a white ocean over all but the highest peaks of Bald Rock and Girraween. Operating in this scenery was magic, and there was more to come with a serene sunrise over the mist.

Contacts fizzled out as we went into the last segment on Sunday morning, but a bit of whip cracking got some of the locals in for a final call. A welcome diversion was the arrival of a big group of local classic car enthusiasts, with some immaculate old Rovers a highlight.

At the end we had logged around 280 contacts, 2 metres providing the biggest total. Carl's superb home-built phased

John Moyle Field Day

VK3AEF on the plains at Tarranginnie

Jim Bywaters VK3AEF
105 Macpherson St. NHILL Vic 3418

I have been part of VHF-UHF Field days for a number of years now. So for the John Moyle Field Day 2003 our VHF-UHF station was located at Tarranginnie 10 km west of Nhill (QFO3sq)

The operators were Bill VK3LY, Brian VK3AQX and Jim VK3AEF. Lionel VK3BUN gave assistance with antenna erection and removal. We operated four bands 50 MHz, 144 - 146 MHz, 432 - 439 MHz and 1296 MHz. The two Yaesu 736R are linked by an audio and sequence control box, which gives instant access to the four bands with cross band facilities.

Jim VK3AEF at work (play?) at his own station

The main mast is a 6.5 metre aluminium lattice. This mast is erected and guyed first and a round 100 mm aluminium support with antenna attached is then winched into position. It is then latched to the mast from the ground. This mast has three bands 2 x 10 element for 144 MHz, 4 x 16 element for 432 MHz and 4 x 32 element for 1296 MHz. Home brew power dividers are used. The home brew two metre dish was also used on 1296 MHz. The results on 1296 MHz were not conclusive, the yagis appeared to have the edge on receive, with the dish getting better reports on transmit. The 7 element for 50 MHz is on a separate mast. A linear amp was used on all bands. (Water-cooled 2c39 on 1296 MHz)

Antenna rotation is driven by windscreen wiper motor. The 100 mm aluminium support is mounted on a Holden front wheel hub. An old ring gear has been shrunk on to the edge of disc brake casting. The bike chains drive a ten-tooth disk, which gives a pulse for each degree moved, this gives a digital read out to the operator. — Hope this makes sense

Calling CQ over the mist *continued*

quads made a big difference, and generated much discussion on what would the likely effective radiated power if all four quads had been used, at around 20dBd gain. This year we did much better on 6, with a more reliable set-up. Operator Rob praised the effectiveness of the DSP on the Icom on the marginal contacts. We also used 500 mW Uniden CB handhelds to communicate between the VHF/UHF tent and the HF van, helping a great deal in co-ordinating contacts.

Packing up was quick and soon we were on our way. Again, good chat in the convoy, plus the added game of 'spot-the-lost-element' (fallen off LCD's beam on the way up). Unfortunately it wasn't recovered. Looking back as we rolled on down from the tablelands toward Casino, we could see a mean storm brewing over the area we had left.

The feeling amongst the crew was that our operation was much improved, but there are still lessons to be learnt. Some antenna refinements could be made, and a better power supply arrangement than the wild assortment of batteries, leads and clips which somehow remained intact for the duration. Solar power might also be considered. Next year, we will try to be neater and mistake free with our logging, won't we! Re the rules, as the HF operator, I felt that the scoring system could offer more incentive for distant contacts. This year, despite entering as all-band, all-mode, all our contacts were on phone. Next time might see a key getting some use, (though some solid practice will be in order) and maybe we could get some digital modes going. Also, we only worked FM on two and seventy, and more distant contacts might await on SSB. I must say, as a novice, what a pleasure it was to be able to work 40 metres, what a great band.

We were indeed fortunate that the weather came right just for the occasion, capping off a terrific weekend for a great Summerland Club team, who doubled the score over last year. We all had a terrific time, and gained more valuable experience for portable ops. Thanks must go to Neil and the Tenterfield SES, the local authorities for allowing us to use the beautiful and well cared-for site, and thanks to all those stations that called us. This year we have an inaugural award (as yet untitled) for the highest number of John Moyle contacts to VK2SRC portable from a SARC member, which goes to Leith VK2EA, with 16 contacts, narrowly pipping Kris VK2MRN with Ian VK2IGS coming in third.

Days after the contest, my mind was still on the mountain. There is something about working from a summit, particularly on a moonlit night, that enhances that magic feeling of signals reaching across vast distances, bringing voices of friends and strangers to your table. For anyone considering going portable for the John Moyle 2004, get a group together and go to your favourite picturesque location, we'll be calling you CQ from the mountain.

Gil Sones VK3AUI
230 Moore Street, Box Hill South Vic 3128

Compact 100 Watt Z-Match Antenna Tuner

A compact Z-match antenna tuner, built for use with an IC706, was described in *QST*, January 2003 by Phil Salas AD5X. The tuner uses two small broadcast radio style dual gang condensers and a toroid coil to make a compact tuner as a companion to an IC706.

The circuit of the tuner is shown in Fig 1. Capacitors C1 and C2 are dual gang broadcast radio variables with a maximum capacitance per section of between 385 and 440 pF per section. The coil is wound on a T157-6 AA toroid. The winding of L1 consists of a main primary 22 turn winding tapped at 5 turns and 11 turns using #20 enamelled wire with a secondary winding , also of #20 enamelled wire, of 8 turns centred around the 5 turn tap.

The tuning gang capacitors are mounted on a piece of perforated Phenolic board which allows C1 to be above ground. Insulated shaft extensions are used so that the adjustment of the capacitor above ground is trouble free (no RF bites). The insulated extensions could be made from plastic rod and either brass or tubing couplers depending on what you have to hand. The toroid coil is mounted to the gang capacitor C2 using hot melt glue and the wire leads.

The capacitors could be sourced from hamfests or, if really desperate, you could try the source used by Phil AD5X, Fair Radio Sales, www.fairradio.com.

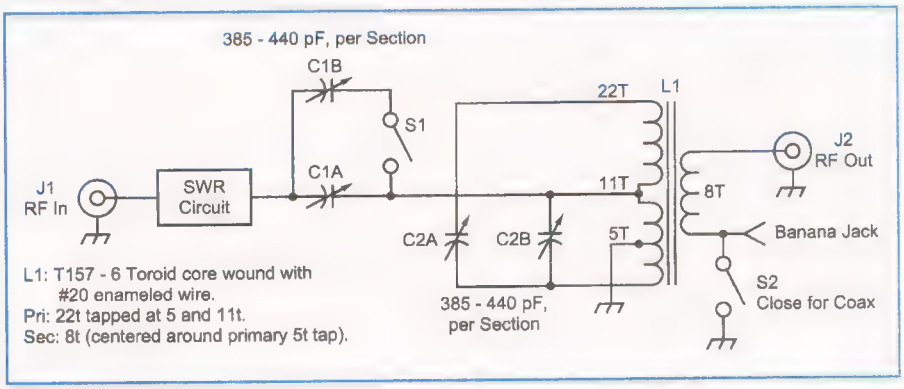


Fig 1. Compact 100 watt Z-match tuner.

Cable and Connectors

Belden

- RG58C/U Belden 8259 @ $0.90 per metre
- RG213/U Belden 8267 @ $4.45 per metre
- RG8/U Belden 9913 Low Loss @ $5.15 per metre
- RG8/U Belden 9913F7 High Flex Low Loss @ $5.55 per metre
- RG8/U - RF400 Belden 7810 Low Loss Sweep Tested to 6000MHz @ $6.30 per metre

LINK

- RG58: B80-006 UHF connector (M) @ $7.65 each
- RG8/213: B80-001 UHF connector (M) @ $8.80 each
- RG213: B30-001 N connector (M) @ $9.10 each
- RG8: B30-041 N connector(M) @ $14.00 each

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www.connektron.com.au

The cost of airmail postage would need to be considered but should not be too high if you have to get them this way. A look around locally would probably turn up suitable capacitors. Old broadcast radios beyond repair may be a source.

The unit was built with a built-in SWR bridge which is shown in Fig 2. The basic SWR bridge sensor is shown in Fig 2A with LED indicators forward and reverse. To have an indication of the level of the reverse voltage you can replace D1 with the LED bargraph shown in Fig 2B. This allows the SWR to be indicated but does require a DC supply to be provided. The inductor L2 uses an FT37-43 toroid with a 10 turn bifilar winding of #26 enamelled wire. The inner of the coax runs through the toroid as a single turn winding between the RF in coax connector J1 and capacitor C1. Capacitor C3, a 20 pF trimmer, is adjusted for minimum reflected with the SWR circuit temporarily terminated in a 50 ohm load at the point normally connected to gang capacitor C1.

The RF output connections for the antenna connection consist of a banana plug jack and an SO239 connector. If you are connecting a balanced line, the inner of the coax socket will accept a banana plug.

The original of this tuner was built in a 5.25 x 3 x 5 inch aluminium box.

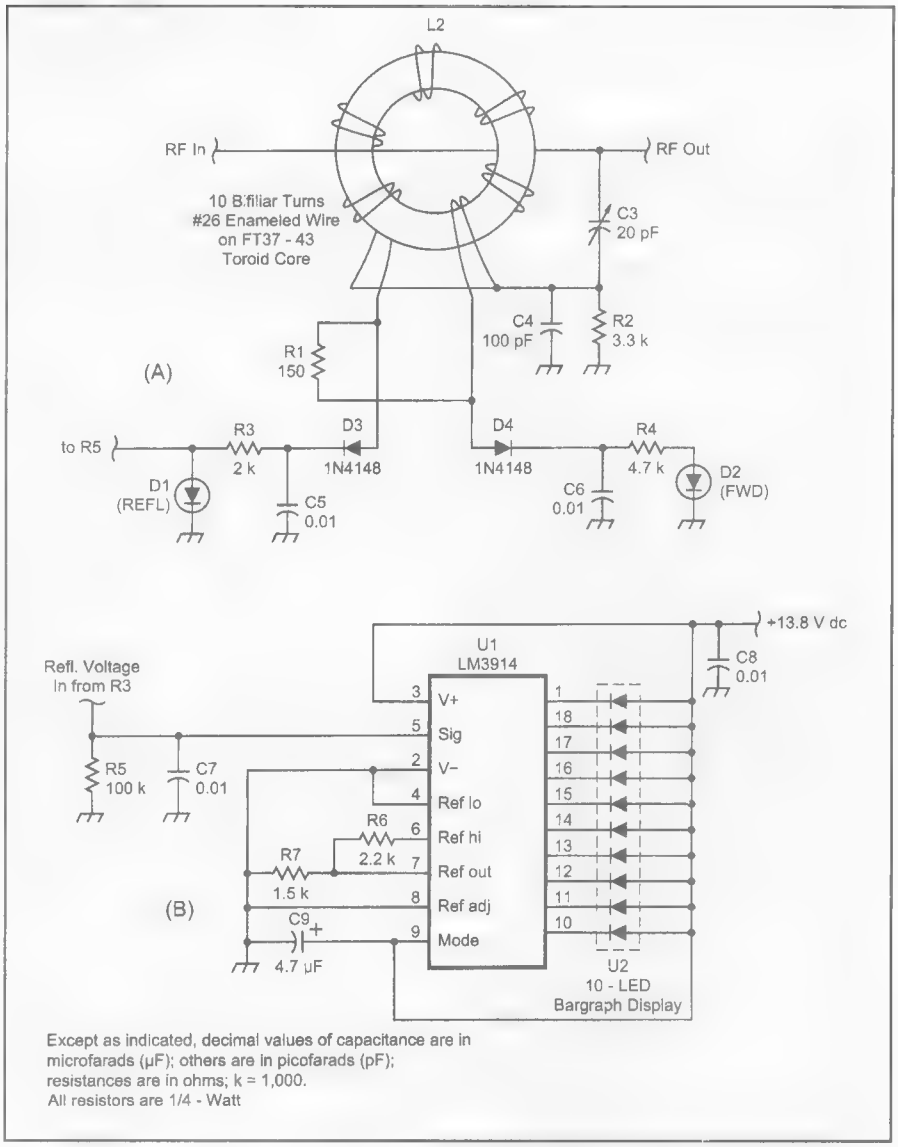

Fig 2. (A) SWR bridge with LED indicators.
(B) Optional LED Bargraph display for reflected voltage.

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VHF UHF J Pole Antenna

A VHF UHF J-pole antenna which provides operation on 2 metres and 70 centimetres was described in *QST*, February 2003 by Edison Fong WB6IQN. This design gives good performance on both 2 metre and 70 centimetre by using a coaxial stub to decouple the 2 metres and 70 centimetres radiators.

A J-pole antenna when built for 2 metres can be used on 70 centimetre but, as the radiator is 1.5 wavelengths long on 70 centimetres, the radiation maximum is elevated in the region of 50 degrees above the horizon giving less than optimum 70 centimetres performance. By using a coaxial stub to give an 0.5 wavelength radiator on 70 centimetres this design allows the antenna to produce a radiation maximum closer to the horizon.

The original two metre J-pole is shown in Fig 3. This basic dual-band J-pole made out of 300 ohm ribbon and housed inside a PVC pipe radome was described by J Reynante KD6GLF in *QST*, September 1994. This antenna operates as an end fed, half wave dipole on 2 metre and as an end fed, three half wave antenna on 70 centimetre. The 70 centimetre performance may be affected due to the resulting elevated main lobe, which is approximately 50 degree above the horizontal.

The dual-band J-pole designed by Edison WB6IQN is shown in Fig 4. The antenna is made out of 300 ohm ribbon feeder with a stub made out of RG174 coaxial cable. A stub of RG174 coaxial cable is used at the 1/2 wave point on 70 centimetres to cause the radiation angle to be lowered on 70 centimetre without significantly affecting 2 metres operation.

The bottom section below the RG174 coaxial stub is built first. The SWR is checked on 70 centimetres. The coaxial stub is initially cut 10%-15% too long to allow for adjustment. The quarter wave RG174 stub is then attached to the top of the bottom section of the antenna. This is at the top of the 11 1/4 inch section above the matching stub. The matching stub at the base operates as a 1/4 wave matching stub on 2 metres and a 3/4 wave matching stub on 70 centimetres. The bottom, open end, of the RG174 stub should now be trimmed for minimum SWR on 70 centimetres.

The top VHF section of 300 ohm ribbon should now be connected. This is nominally 17 inches long but should initially be 10%-15% longer to allow for trimming for minimum SWR on 2 metres. The SWR on 2 metres may now be adjusted by trimming the top section, nominally 17 inches long, for minimum SWR on 2 metres.

The antenna is enclosed in a _ inch (19 mm) PVC pipe with end caps. The housing should be about 12 inches (300 mm) longer than the antenna. An SO239 is mounted on the bottom end cap. The RG174 from the feed point is terminated on the SO239. The length of PVC pipe below the antenna provides a convenient place to mount the antenna without affecting performance. The antenna may be held in place inside the PVC pipe using glue or pieces of foam. PVC electrical conduit may be used for the Radome.

The stub and feed line in the original were made from RG174 coaxial cable, which is thin coaxial cable. Other types of coax could be used such as RG58 but you should check that the velocity factor is the same as that of RG174. This would be most important with some look alike RG58 cable types, which may use different dielectric types.

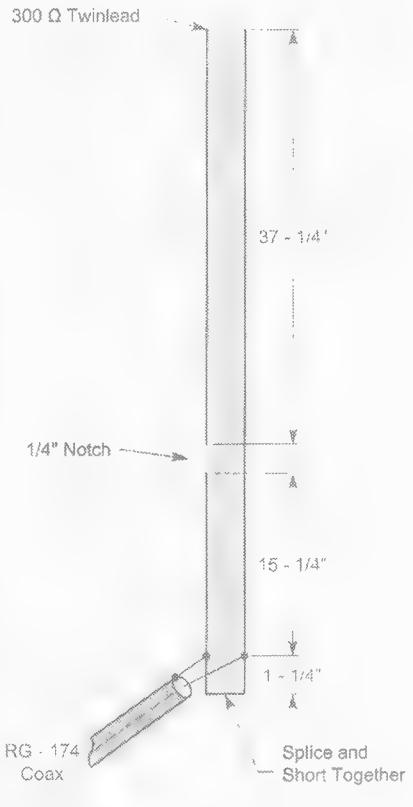

Fig 3. Original Ribbon J-Pole.

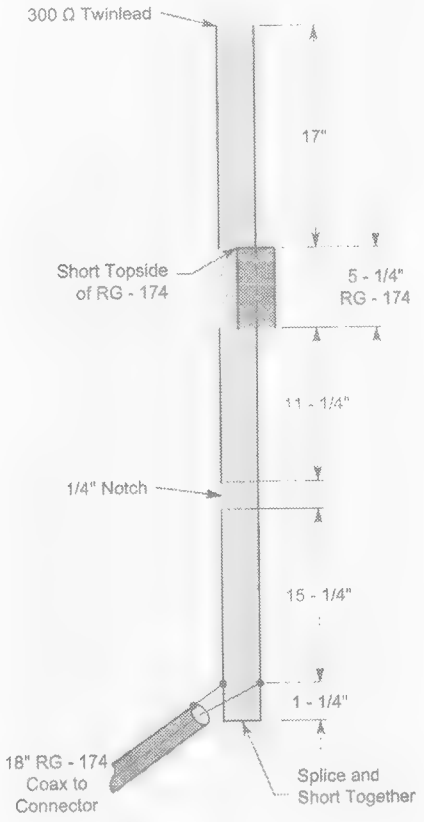

Fig 4. J-Pole Modified for Improved VHF – UHF Operation.
The dimensions are approximate and are modified on test.

A Crossed Field Loop Antenna for 3.5 MHz

by Lloyd Butler VK5BR

The Crossed Field Antenna (CFA) has been the subject of much controversy over recent years. The writer describes experimental work carried out on a CFA Loop for 3.5 MHz including the problems in making it work and the performance achieved. This is another antenna which might be useful for someone with limited space to erect a larger 80 metre antenna.

In a previous article, I described EH type dipoles for 20 and 40 metres. This leads to the question - what about one for 80 metres? Based on the recommended design dimensions found on the Internet, this would require a PVC tube 200 mm in diameter and around 2 metres high. For 80 metres, perhaps a small Crossed Field Loop might be another choice for a more compact antenna. I have experimented with such an antenna made up with a coax cable loop less than 1 metre square. In the following paragraphs, I describe how I made this type of antenna operate and what results were achieved.

Some Basic Requirements

It is not my intention to discuss fundamentals of the Crossed Field Antenna (CFA) which was first introduced by Professor Maurice Hately (GM3HAT) except to say that he also introduced the Crossed Field Loop.

To achieve the desired crossed field, the Crossed Field Loop has two adjacent loop circuits separately fed and the RF currents are forced through these two circuits 90 degrees out of phase with each other. However this is not easy to achieve. Because of mutual coupling between the two circuits, the tendency is for the two circuits to resonate as one so that currents within them assume the same phase relationship.

My initial thoughts were to reduce the coefficient of coupling between the two loops to as low as possible. However, I eventually came to the opposite conclusion. The two loop circuits are in fact cross connected in anti-phase and I found it was desirable to have as large a coefficient as possible so that mutual inductance between the two was cancelled as much as possible. This is achieved better by using a coaxial cable (one conductor inside the other) in preference to two side by side conductors.

To achieve the 90 degrees phase shift between the two currents, external reactive circuits are used. To force the two currents to not take up single resonance in the coupled loops, the inductance of the external series components is made large compared to the cross connected inductance of the loops. For example in the 3.5 MHz loop described here using RG59/U cable, the cross connected inductance is around 0.5 µH and the series inductors are around 5 µH.

Some form of monitoring the two phase currents is needed to adjust the two loop currents for the 90 degrees shift. When correctly adjusted, one loop circuit is actually resonated just below centre frequency and the other just above. It is no good adjusting just for lowest SWR as the result may be single resonance of the combined circuit and in effect, operation in a low efficiency magnetic loop mode.

To monitor the phase difference, a current transformer in series with each loop leg is coupled to a dual trace CRO. I initially passed the loop legs through the centre of ferrite toroidal cores but I found these saturated as power was increased causing distortion of the monitored waveform. They also introduced an accountable loss resistance component in series with the loop radiation resistance. The lower the ferrite permeability, the lesser the effect but I ultimately got rid of the ferrite and passed the wires through small insulated sleeves used as formers to support a 20 turn secondary winding.

Monitoring with the CRO can be quite tricky. I was tricked many times by residual signal induced by direct induction from the loop into the CRO probe leads and which interfered with phase monitoring signals.

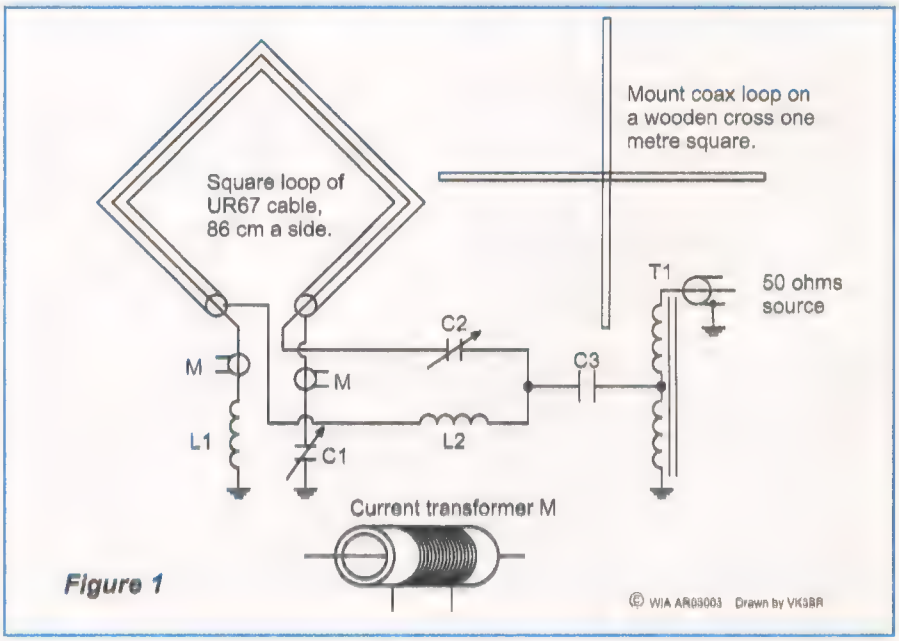

Figure 1

The 3.5 MHz Loop

After a lot of experimentation, I finished up with the arrangement shown in figure 1. The square loop is mounted on a wood cross with cross arms 1 metre long. UR67/U coax cable forms a square with sides of 86 cm. (Of course any other type of coaxial cable would have also done the job).

The series inductors are wound on 2cm diameter ribbed ceramic formers which I had on hand. I found I needed slightly more inductance in series with the inner loop than for the outer loop. For C1 and C2, I initially used wide spaced variable capacitors padded up to the required capacitance values with paralleled mica capacitors but I had trouble with the mica capacitors failing, possibly due to the high RF currents in the circuit. So I eventually fitted the 160 pf vane type air dielectric trimmers which were just large enough in their maximum capacity to achieve tuning. The plate spacing of these capacitors limit maximum power to about 30 watts above which arcing occurs across the plates. However this was sufficient power for me to carry out the experiments.

With the loop currents adjusted for the required 90 degrees shift, I found a need for a small amount of phase correction overall and hence the inclusion of capacitor C3. Loaded resistance of the adjusted circuit turned out to be around 10 to 12 ohms and this allowed a fairly reasonable match to 50 ohms with 2:1 transformer T1, giving 4:1 impedance ratio.

When the loop currents are roughly equal and 90 degrees out of phase as indicated by the CRO, SWR can be very close to 1:1 at the tuned up reference frequency. Moving up or down the band from this frequency alters the relativity of amplitude and phase between the two currents, alters the load impedance and alters the SWR. For a given fixed adjustment, SWR can be held within 2:1 over a frequency range of 75 kHz.

I am not sure in what plane this antenna should best operate. The photos of Professor Hately show him holding his antennae in the horizontal plane. However I arranged for a friend, 7 km distant, to monitor signal level for different orientations of the loop. My loop was elevated around 2 metres above the ground and my friend received via a loaded vertical antenna. The highest signal level he received was with the loop plane vertical and at right angles to the direction of transmission. With the loop plane still vertical but in line with the direction of transmission, the signal was 1.5 S points lower. With the loop plane horizontal, the signal was one S point below the first test. All in all, it didn't seem to be all that important how the loop was orientated. However from our tests, it did seem best with the loop in the vertical plane and at right angles to the direction of transmission...

The signal was also compared with that from an end fed V, a little over a quarter wave long and operated against ground as a Marconi antenna. The signal level received from this was close to three S points above the highest level signal from the loop.

Loss resistance

On air tests indicated that the loop performance was something like 20 dB down on a full sized wire antenna. The question arises about where the power goes that feeds into the loop. How much is actually radiated and how much is lost in heat in the loop circuits? I made some measurements to get some idea of what proportion of power might be lost in the RF resistance of the loop windings and the series inductors. This was done by measuring the approximate inductance and Q factor of each and deriving, from these, values of loss resistance. These were evaluated as follows:

Outer Loop Conductor = 1.5 ohms
Inner Loop Conductor = 2.2 ohms
Each Series Inductor = 1.2 ohms

Total resistance in the outer loop circuit is therefore (1.5 + 1.2) = 2.7 ohms. Total resistance in the inner loop circuit is therefore (2.2 + 1.2) = 3.4 ohms. The parallel resultant of these is close to 1.5 ohms. Assuming this figure is part of the approximate 10 ohms load resistance measured, one could assume the proportion of power loss due to loss resistance in the loop circuits to be (1.5/10) x 100 = 15 % or less than 1 dB.

Can we assume that the remaining 85% is radiated and if so, is much of it being lost in the wrong direction (Perhaps straight up due to ground reflection)? Or perhaps there is high absorption into the earth or surrounding objects.

Comparisons

It has been suggested that I compare the performance of this CFA Loop antenna with the Magnetic Loop but it is not easy to make direct comparisons. The CFA loop, designed for 3.5 MHz, is just under a metre square. To compare with a magnetic loop of similar dimensions, I have a magnetic loop, also just under a metre square, made of 20mm diameter copper tube designed to be quite efficient at 21 and 14 MHz. At 21 MHz it has a calculated efficiency of 89% and at 14 MHz a calculated efficiency of 68%. With extra tuning capacitors it could work at 7 MHz and 3.5 MHz but efficiency falls to a calculated figure of 15% at 7 MHz and only 1.5% at 3.5 MHz

On 14 and 21 MHz, the magnetic loop performs as well as a full sized wire antenna but because of the low efficiency at 3.5 MHz, it would clearly be around 20 dB down in performance on the full size antenna. Tests using my 3.5 MHz CFA dipole have indicated that its performance is also around 20 dB down on a full size wire antenna.

Made to the right dimensions for the particular frequency, the magnetic antenna works extremely well. However it has a limitation in its very high Q resulting in limited bandwidth and the need to progressively retune as the band is scanned. At 14 MHz, the calculated bandwidth for my magnetic loop is 19.6 kHz. At 3.5 MHz, there might be a real problem as the calculated bandwidth is only 1.6 kHz. By comparison the 3.5 MHz CFA loop holds a tolerable match over a 75 kHz range.

Some Conclusions

Well I can't say I am madly excited about this antenna. It will transmit and receive but not as well as a quarter wave Marconi antenna. (My observations indicate around 20 dB difference both on receiving and transmitting). On the other hand, it might be the answer where one needs to get on 80 metres, at least with some sort of signal, but doesn't have the space for a larger antenna.

I see no problem for the home constructor in making the unit if he can find some suitable variable capacitors of high enough capacitance and which will withstand both high voltage and high RF current. I see a problem if the home constructor doesn't have some means to monitor and set the two loop phase currents correctly.

Technical Abstracts

Installing Insulators on Loop Antennas

A handy way of installing insulators on loop antennas was described in the *Hints and Kinks* column of Bob Schetgen KU7G in *QST*, January 2003. The method allows the loop to be reconfigured which can be useful if the loop is being used in a portable station. The idea originated with Hugh Inness-Brown W2IB.

The method works well with stranded or flexible wire but may not be suitable for stiff wire types. The installation of insulators using this method is shown in Fig 5. The insulators used are of the dog bone type.

Installation is as follows:

1. Bend wire double at the desired location of the insulator and pass it through the end opening of the insulator. See Fig 5(A).
2. Pass the insulator through the loop of wire . See Fig 5(B).
3. Pull the wire tight. See Fig 5(C). This makes a secure connection to the insulator which will not slip. See Fig 5(D).

The insulator installation can be easily undone should you need to move the insulator.

The technique could be used for fixed antennas and can be used with insulated and un-insulated wire.

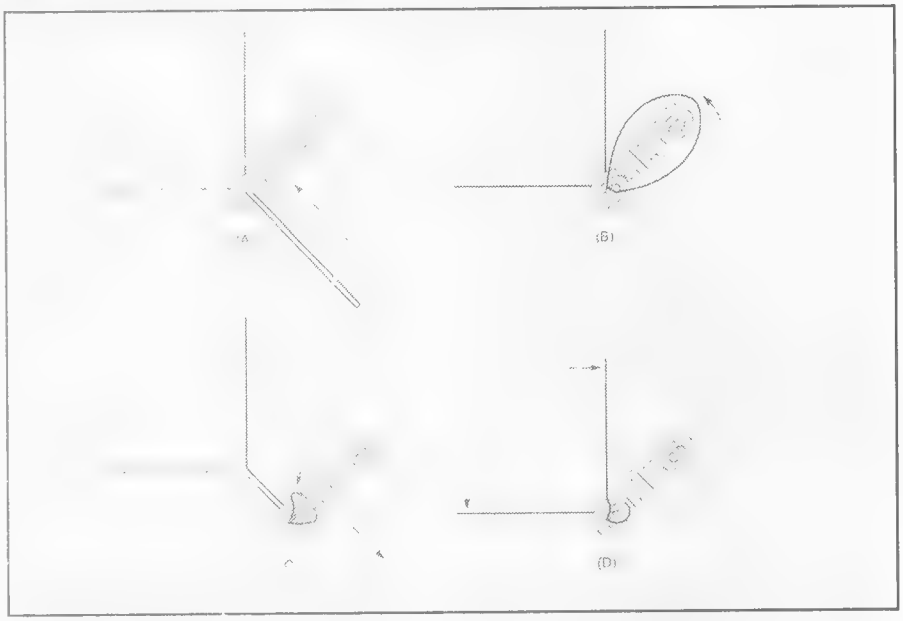

Fig 5. Installing insulators on loops without breaking the loop conductor.

Using Plug Pack Power Supplies

A technique for using a variety of plug pack power supplies for various projects and equipment around the shack was described in the Hints and Kinks column of Bob Schetgen KU7G in QST, January 2003. The idea was originated by H M Knickerbocker K6SK. The idea allows a variety of plug packs with varying output polarity, and even with ac output, to be used without damage to equipment.

The idea is to include a bridge rectifier and filter capacitor in each project or piece of equipment. This allows both ac and dc plug packs to be used and polarity is not important. The downside is that approximately 1.4 volt will be lost. Still this may be worthwhile if it saves repairs and makes plug pack selection less critical.

The added bridge and filter capacitor is shown in Fig 6.

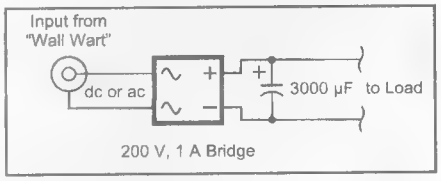

Fig 6. Added Bridge and Filter Capacitor protect against reversed power connection.

New address for General and Technical articles:

Secretary
AR Publications Committee
3 Tamar Court
Mentone VIC 3194
or armag@optusnet.com.au

Columnists, Club and Divisional contributors...
please submit your contributions for the June edition of Amateur Radio to **The Editor**
Amateur Radio
34 Hawker Crescent
Elizabeth East SA 5112
or
edarmag@chariot.net.au **by 15 May**

ZD1FG 44 years QSL at last

Bill Wells VKUA

About 2 months ago while running the ANZA net on 14.183 MHz starting at 0530Z I had just signed with Elmer 9L1DX when ZF2FG came on asking if Elmer was still on frequency. The answer was no. Art then explained that he had been ZD1FG and would have liked to chat with Elmer. My old memory to VK3WL days reminded me of a QSO in the late 1950's. On checking my log, there he was 19 July 1958on CW and phone – but I had never found a QTH to send the card to. So off went a QSL and a letter to Art. His reply and original ZD1FG card was a pleasant surprise after nearly 44 years.

Dear Bill,

My apologies for this delay in replying to your letter but we have recently shifted from our old home at Riverdale Beach to the city of Wanganui, which is on the west coast about 200 kms north of Wellington. I knew that I had some old ZD1 cards left but it has taken an age to find them after the shift.

However rummaging through an old box of QSL cards a few days ago there they were - some old ZD1 cards from my days at Njala so long ago. So you are in luck because I am able to send you the dinkum oil - must be a record for a delayed QSL confirmation Bill - almost 44 years!!

We spent 4 years in Sierra Leone where I was a UNESCO science education consultant to the Sierra Leone Government, spending two years in Freetown on the coast then two at Njala in Central Sierra Leone. While there I used my ham rig to test the feasibility of low power, low cost educational broadcasting in the country. It was a great success and led to feasibility test broadcasts for the Agriculture Dept - telephone communication throughout Sierra Leone was poor and they wanted to install a reliable means of communication for their agricultural officers who were out posted throughout the country. Interesting work for a mere amateur!

Ham radio has been a great companion to us during my work overseas. Spent 7-8 months in the UK in 1959-60 and went on air as G3NUZ. For three years in India I was VU2VGA, two spells in Thailand as HSIAHW, and two in Singapore as 9V1SM. I also had a spell in Sri Lanka and was allocated a 4S7 call but never went on air because they had a civil war and all ham stations closed down!

Mostly worked for UN organizations during those years, which I found most rewarding.

Hope that you like the card Bill - it was printed by one of the up country US Mission stations who had a printery for producing schoolbooks in local languages. Reckon its one of the best cards I have ever had.

Would have liked a QSO with Elmers 9L1DX but I have no beam at this QTH so such QSOs are not possible. I once had a 3 band 2 element quad but that had to be forgotten when we shifted. By the way - these days, as an old timer (81) I have no QSL card, nor do I QSL! So you are in luck!

Best 73 ZL2FG ex ZD1FG

8 May 2002

SIERRA LEONE
ZDIFG
To VK3WL
Date 19.4.58
Time 1740
Confirming our QSO on 14 mc. P. 4/5 C.W. Signals R. 5 S. 7 T. 9
(G.M.T.)
Transmitter p.p. 807 r.f. p.p. 807 modulators 75 watts. A.M.
Receiver H.R.O. plus converter
Antenna.
Zepp Beam
Thanks for QSL.
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ARTHUR W. TORRIE, UNESCO T. A. MISSION, NJALA

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Remember the AGM

The AGM for ALARA is again on the FIRST Monday in May. We always have a good roll call for the AGM, so let us make sure this one is equally long. The list of nominations and the agenda is in the April Newsletter. See you there!!

A career move for Pam

Pam VK3NK, a long time member of ALARA, has recently become the Headmistress of "Cathedral College" In Wangaratta. Pam has been teaching and living in the Seymour area for a number of years so it is quite a major move.

We wish her well and hope to see her at an ALARAMEET in the future. We know she planned to come to Murray Bridge but couldn't make it. Better luck next time in Mildura.

Tower climbing training

Under the new OHS (Occupational Health and Safety) regulations, you, even as an amateur, are only covered by insurance when you climb your own tower. If you climb anyone else's tower you are not covered unless you have attended and passed an official training course and only then if you are using an approved type of climbing harness.

A couple of photographs, taken at a demonstration evening, in Adelaide, illustrate the approved climbing gear. (Rather different to the old safety belt!)

Training courses are held in all the capital cities several times a year, through the local electricity or telecommunications organizations.

Mary VK5AMD attended one held north of Adelaide in February. It is understood that she was the most proficient and the keenest of all the students in the group. Mary had previously completed a cliff rescue course run by the SES and has a local reputation of being completely comfortable at any height above the ground. When Mary is around, while others are still discussing who is to climb, Mary is already half way up with all the tools and equipment she needs for the task.

The radio group centered at Naracoorte has built or acquired a repeater to cover the South East of SA and Western Victoria. They have permission to put the repeater on a council tower but the Council will only allow it to be placed there if it is done by qualified climbers, so Mary now has the required certificate. Hopefully the repeater will be heard soon.

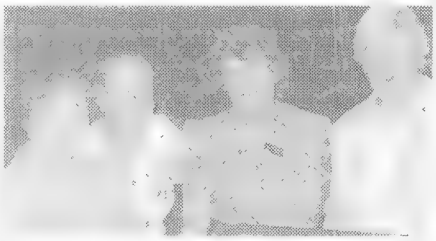
This requirement, of course, is another reflection of the insurance situation we all have met in various ways. However any amateur who is used to climbing towers for other amateurs should be careful to make sure he abides by the OHS regulations now in place.

A Correction

I invited visiting YLs to luncheons in VK5, VK3 and VK6, recently, but I told you they were all held on Fridays. Wrong! In VK6 they meet on the third Thursday of each month. The VK5 and VK3 luncheons are on Fridays, on the second Friday of each month but VK6 is different.

Please get in touch with a local YL if you are visiting. Even if it is not on a regular date, a special luncheon can sometimes be arranged.

In VK5 just such an extra lunch was held when Marilyn VK3DMS and OM Geoff were in Adelaide. Jean VK5TSX, Shirley VK5JSH and Christine VK5CTY were able to come along. Geoff VK5TY, OM of Christine and Jim VK5JST, OM of Shirley was also present to keep Geoff VK3ACZ company. A good time was had by all, especially the hilarity associated with taking a suitable photo with a new digital camera. A new toy.



A little poem sent me by email

Hello there nice person did anyone ever tell you?
Just how special you are?
The light that you emit might even light a star
Did anyone ever tell you
How important you make others feel
Somebody out here is smiling about love that is so real
Did anyone ever tell you
Many times, when they were sad
Your e-mail made them smile a bit, in fact it made them glad
For the time you spend sending things and sharing whatever you find
There are no words to thank you
But somebody, thinks you're fine
Did anyone ever tell you?
Just how much they like you
Well, my dearest "online" friend
Today I am telling you
Thank you friend, you made me smile
I hope this made many of you smile too.

Beyond Our Shores

David A. Pilley VK2AYD
davpil@ midcoast.com.au

Colombia

Colombia's national ham radio society remains on the brink of being dissolved and you may soon hear very few of that nation's hams on the air. According to Fred Laun, K3ZO, in a report originally appearing in several D-X newsletters, the reason is the economy.

Laun's old friend Beto Rojas, HK3DDD, in Bogota says that Colombian postal rates doubled as of January 1st. It now costs the equivalent of $2.00 US to send a letter to the United States. As a result Colombian hams would have to pay the equivalent of 13 cents per QSL to send outgoing cards through the bureau.

Colombian I.A.R.U member society — the Liga Colombiana de Radioaficionados – L.C.R.A. — was to meet on Saturday, March 1st to dissolve itself. (No news since). It now has only 200 paid members and was an equivalent of 8000 United States dollars in debt. It's leaders felt that it could no longer stay in business. But says Laun, a miracle happened. At the meeting one of the members donated $7000 to pay most of the current debt. So, L-C-R-A will continue to operate as Colombia's national society for at least the next three months.

In a note to Amateur Radio Newsline, Laun says that several Colombian hams were moved by the messages they received from around the world and have vowed to try to rescue their almost 70 year old society from the brink of oblivion.

Even so, HK3DDD says that many Colombian hams have stopped calling C-Q and some have terminated all high frequency operations as they can no longer afford to meet the demand for QSL cards.

(ARN via QNEWS)

Hinternet U.S.A.

The ARRL High Speed Multimedia (HSMM) Working Group is surveying the amateur community to gauge interest in IEEE 802.11b "Hinternet" activity.

"The primary goal of the survey is to encourage amateurs to get on the air and start playing with this cheap digital microwave gear," says HSMM Working Group Chair John Champa, K8OCL k8ocl@arrl.net. Hinternet Radio Local Area Networks (RLANs) typically use direct-sequence spread spectrum between 2412 and 2437 MHz and can simultaneously carry audio, video and data signals. Hinternet aficionados adapt commercial 802.11b interfaces, designed for Part 15 operation, to amateur use.

The HSMM Web survey is brief and permits an opportunity for open-ended input. It asks if respondents have a IEEE 802.11 or "other high-speed digital station" running under Part 97. If so, amateurs are asked to register their stations. It also asks respondents to explain how they might use a high-speed digital system or network if they were to set one up.

Asked if the Hinternet is catching on within Amateur Radio, Champa simply points to the more than 15,000 hits to the HSMM Working Group's Web site. The Hinternet also is the focus of the article "High Speed Multimedia Radio" by Kris Mraz, N5KM, in the April 2003 issue of QST.

Hinternet proponent Mark Williams, AB8LN, of Milford, Michigan, envisions growth of amateur 802.11b operation to cover all large metropolitan areas in the US, not just the few miles some contend as the limit for such point-to-point connections. "This is just too easy," he says. "With some of the Amateur Radio pioneering that we are famous for, we should be able to push this technology to its limits—50, 75 and 100-mile links at 2.4 GHz." He said wireless networks dedicated to Amateur Radio stretching across states and linking hams everywhere with high-speed voice and video are possible. "File-sharing and e-mail, network gaming and pop-up chat are just the tip of a titanic iceberg," he predicted.

Applications abound for public service work. Amateurs in the Texas search for debris from the shuttle Columbia used a 802.11b high-speed system on ham radio to link the net control station in Nacagdoches with the Internet.

More information is available on the ARRL High Speed Digital Networks and Multimedia Web page http://www.arrl.org/hsmm/.

(ARRL N/L)

Travel warning

DXers advised to use carry-on luggage only.

If you are planning a DXpedition, you might want to think in terms of smaller being better.

This following report is of vandalism to the luggage of a recent DXpedition by those highly trained security folks at Seattle Washington's Sea-Tac Airport.

Amateur Radio Newsline's Jim Meachen, ZL2BHF, (Auckland NZ), reports on the experience of some homeward bound DXpedition operators:

"When the D-Xpedition group returning from the recent AH3D operation reached Seattle for their connection to Copenhagen, all their cases' locks were broken by the Sea-Tac Airport security people who just had to take a peek inside within a secure area of the airport.

As most seasoned travellers know, security should find the passengers to get the keys to luggage that they want to inspect. In this case security simply broke into them, resulting in damage to the luggage and some rather messy repacking. *(We trust they made large insurance claims)* As a result of this experience, DXer Martti Laine, OH2BH, says he will be going hand carried from now on using the new Yaesu FT-897, which weighs in at only 8 and 1/2 pounds and goes in the passenger cabin with him. De Jim Meachen ZL2BHF.

(ARN via QNEWS)

Club Notes

Introducing RAAF Williams Amateur Radio Club

By Jim Linton VK3PC

This active Melbourne club began as an amateur station for RAAF radio apprentices, but membership has been open for many years to anyone with an interest in the hobby.

In the early years of the RAAF some technical apprentices were trained at *Frognall*, a 14-room mansion in Camberwell, in Melbourne's inner east. The former private school became a WW II RAAF tele-communications station, a training centre and later the School of Radio "Detachment A".

Around 1950 the then Commanding Officer of Frognall, Squadron-Leader John Marr, obtained a licence for the apprentice's ham radio station which was given the callsign VK3APP.

The callsign suffix "APP" was used at the time to represent the apprentices, as all apprentices were referred to as "APPies". VK3APP remains a symbol for all apprentices who have passed through the School.

The early 1960s saw the School of Radio move from Frognall to RAAF Base Laverton, re-named in the early '90s as RAAF Base Williams, and the radio club became the RAAF Williams Amateur Radio Club (RWARC).

A highlight for RWARC was in 1991. Its members learnt that Shuttle mission STS-37 (Atlantis) had a program to allow school students to talk to the crew during three orbit passes over Australia.

The club applied, on behalf of the RAAF School of Radio at Laverton in Melbourne's west, to participate in the program. VK3APP was allocated orbit 14, their window occurred just 18.5 hours after launch, at 2125 local on Saturday, 6 April 1991.

A feature story was published in the Amateur Radio magazine June 1991, covering the events of that historical day. The spirit shown by its members in that exercise lives on today.

The club caters for a range of interests including homebrew or construction, operational activity, social events – in fact its members enjoy virtually every major aspect of amateur radio.

A friendly atmosphere

Visitors to the club, or those who make the initial telephone call or e-mail contact with an official, will find they receive a warm welcome whether they're already a radio amateur or just a beginner seeking help and guidance.

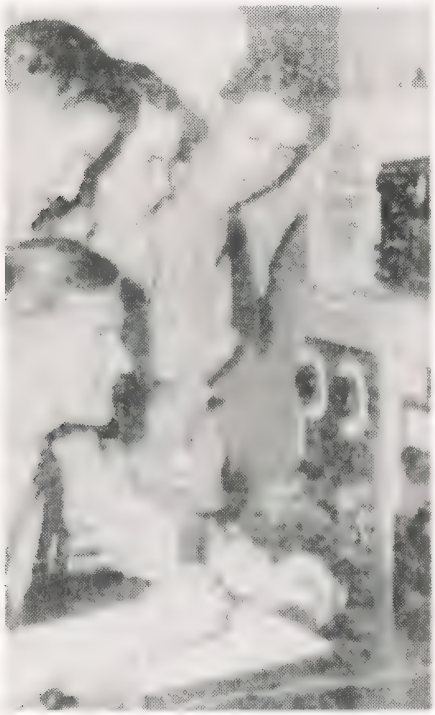
Meetings or other gatherings, including social or BBQ activities, have a friendly low key atmosphere as club members demonstrate mutual respect and support.

The club is well established in two buildings at the RAAF Williams Base at Laverton. The main room is primarily used for the station's on-air activities and meetings. There is an array of antennas for HF, VHF, UHF and a satellite dish.

Equipment includes Packet Radio, HF transceivers; VHF gear and future expansion plans include an Amateur Television station.

The club's callsign VK3APP can regularly be heard during the annual JOTA, amateur radio contests, the RAAF Adventure Training exercises, and a club chit chat to help keep members in touch. Their club net frequency is 147.800 MHz FM simplex.

Also of interest is the large library of radio magazines and reference material and the beginnings of the club's museum of early radio and defence radio communication\test equipment.



The beginning of VK3APP with RAAF radio technicians at the mike - Brian Bell, Jack Griffiths, Mark Webster and Ivan Spiller.

Instructional night, learning the art of soldering. (Photographer unknown)

Tutoring and mentoring approach

A room is dedicated for classroom style instruction giving the club the scope to run theory, regulations and Morse code classes if there are sufficient enrolments.

The club has a fine tradition of helping newcomers qualify for an amateur licence. In fact it has gained a well-deserved reputation for the tutoring and mentoring approach rather than using the traditional study class method.

Club President, Chris Whitefield VK3JAA said attempts at running classes in the past were not as successful as today because they did not suit many who could not attend due to family, work and other commitments.

Chris said, "We found there were people very keen to join the hobby of amateur radio, willing to put in the necessary effort, but formal classes did not suit them."

"The promise we make to them now is to find someone experienced within the club to provide them with individual tutoring or mentoring so they can progress at their own pace."

"When they're ready the club's WIA accredited invigilators can arrange, at short notice, the necessary exam session for them."

He said this approach works well for the club and has resulted in a number of new radio amateurs, and increased club membership.

Sharing of information and expertise within the club is one of its strong points. It frequently holds information sessions run by members – topics have included antenna design, purpose and use of test equipment, and conversion of the Philip's FM900 transceiver to the 2-metre band.

Project nights are also popular with previous projects including how to solder, building a PSK interface, and antenna construction.

The club's monthly meeting features guest speakers which this year will include those talking about Contesting, DXing, and the Wireless Institute of Australia.

RAAF Williams ARC last year qualified to become a WIA Victoria QSL distribution point and helps provide this service to WIA members throughout Melbourne's western suburbs and beyond.

It supports WIA Victoria and was part of the team that put on the amateur radio display over the four days of the Great Australian Science Show in 2001.

A monthly newsletter is produced and club members with e-mail addresses find it very convenient to receive the latest information electronically.

Taking part in JOTA is an annual club activity.
(Photographer unknown)

RAAF Williams ARC also publishes its latest information and photographs of club activities on its Internet web site http://www.vk3app.com

The club meets every Friday night at 7.30pm in the clubrooms located at Bell Parade, RAAF Williams Base, Laverton (Melways 53 B9). Due to current security arrangements in place at all Defence establishments, visitors are requested to contact either the President or Secretary prior to the meetings so access arrangements can be initiated.

For more information please contact

Chris Whitefield VK3JAA, President RWARC, during work hours on 9256 3244 or president@vk3app.com

Ian Handy VK4JAL, Secretary RWARC, during work hours on 9256 3813 or secretary@vk3app.com

Club Rooms 1900-2130hrs Friday nights on 9256 2965.

Club Notes

Adelaide Hills Amateur Radio Society

There have been two activities recently for AHARS. They ran a successful (as far as enjoyment is concerned – results to come later) John Moyle Memorial Field Day at Womberoo, near Swan Reach. Ten participants stayed for the full weekend, three others visited on Saturday.

Four stations were set up under the trees in the scrub; each one attached to a separate wire aerial. The Zepp was used on two bands, 160 metres and 15 metres, with some attempts to find contacts on 10 metres. The others were dedicated to a single band.

The operators moved around from station to station. The radios used were given large labels to assist strange users, which seemed to work very well.

The second activity was the Buy and Sell for members only, held for the meeting immediately following the AGM. One person's junk became someone else's treasure, as usual, and the club benefited by 10% of the price. A pleasant excuse to talk to friends as well.

Several meetings where the emphasis will be on historical things are to follow. For details please contact Geoff VK5TY or the new Secretary, Paul VK5PH QTHR the callbook.

VHF/UHF - an expanding world

Leigh Rainbird VK2LRR

2 & 70 FM DX Report

Not all our Radio Amateurs are able to use SSB and the Digital modes, either due to licensing restrictions or availability of radio equipment. Some operators enjoy the challenge and thrill of pushing an FM signal through where it normally would not travel. This column is intended to fill the gap and provide some incentive to see more operators on the bands and perhaps be a stepping stone for some to step up to SSB work in the future.

Unfortunately, as we approach the colder months, good Duct conditions are becoming less and less and distances are becoming shorter. All contacts are worked from QF34nr Grid Square on 2 m FM unless otherwise noted.

February Report

Only one significant Duct during February was accessible for three consecutive mornings, 8–10. Saturday the 8th appeared to be the strongest. I was operating portable from Galore Hill in QF34 grid square during this morning. It was quite amazing to say the least. Signals were coming in from all over.

Significant simplex contacts were completed with – Ron VK3AFW and Barry VK3BJM around Melbourne 350 km; Jim VK3AEF & Bill VK3SWD in Nhill 503 km; Shane VK5NRV at Woodside 720 km Brian VK5ZMB at Gawler 735 km; Greg VK3MTV at Mildura 460 km; Joe VK5UJ at One Tree Hill 734 km.

Significant repeater contacts were completed with Paul VK2YVG via the very rarely accessed Broken Hill repeater VK2RBH, distance to repeater 628 km. Accessed VK5RAC, near Port Lincoln, 1019 km, no replies to my calls. In general all VK5 2 m repeaters were accessible on the 8th varying in distance from 600 to over 1000 km.

Another major league 2 m DX repeater, VK5RMB at Murray Bridge S.A on 146.875, was repaired and put back in service in February and was heard many times. At over 700 km, very impressive, being accessible when nothing else was heard. Thanks to Rob VK5MM for answering the early morning CQs.

March Report

Two Ducts seemed usable in March.

The morning of Saturday 15th was parr of the John Moyle contest, unfortunately the Duct did not continue on the Sunday morning in southern VK2 but was still able to provide some assistance for some southern VK3 operators into VK5.

During the morning of the 15th the Duct came and went pretty silently, I think many operators were in transit to their contesting locations. Initially John VK5NJ at Mt Gambier made the trip into VK3RMM, Mt. Macedon 2 m repeater and then across to Ararat VK3RWA.

The Warrnambool VK3RWL 2 m repeater (the most distant VK3 repeater from QF34nr grid at 512 km) then drifted into play. Surprisingly, after contact via the repeater, I was able to make an easy simplex contact with Geoff VK3ZGT, located just out of Warrnambool at 534 km with signals up to 5/7.

A few other shorter simplex contacts were made, VK3HEN at Kyabram around 250 km, VK3UBC at Bendigo 314 km, VK3AIC at Longwood 200+ km.

Mornings and evenings around the 29th March to 1st April had good enhancement and a small Duct. This was caused by a High Pressure cell working its way between VK3 and VK7, which did wonders for those stations aware of the phenomena.

A slow, deep QSB was noted during these contacts. The two best and quite surprising simplex contacts from here were to Chris VK3VSW in Geelong, 383 km. Chris was only using a vertical base antenna and ran up to a 5/7 signal this way. John VK3YD also made it through from Monbulk, 40 km East of Melbourne. John was also using a vertical base antenna up 21.3 m (70 ft), and at a distance of 322 km the signal was 5/5.

Other stations that came up simplex were VK3HEN, VK3KBV, VK3ANW all at Kyabram; VK2KKZ at Griffith; VK3GOM, VK3XDP, VK3JGL all at Bendigo; VK3DSF, VK3AGG all at Shepparton.

Leigh Rainbird VK2LRR

Let's Beat the Winter VHF/UHF Doldrums

It's been a remarkably good summer, certainly here in VK3, with a succession of slow moving Highs across the Bight, producing some long-lasting openings across to VK6. Bill VK6AS in Esperance was at times besieged by a veritable dogpile of VK3 stations on 2m for extended periods.

The recent Field Days also saw plenty of activity with many mountaintop stations working those near and far. Three groups – let's say Gippsland, Melbourne and Western District – have been giving the microwave bands up to 10 GHz a good, successful workout.

This activity shows there are many stations capable of putting out a good signal on all bands from 6m to 3cm. However, with winter approaching, the VHF/UHF bands are quietening to the point where regular evening CQ's on 2m often go totally unanswered. As for the call frequencies on 70cm and 23cm, does anyone monitor these or are they only used after a hookup on say 2m?

The pressure is on for RF space and there is a great risk of us losing substantially here – as is already about to happen with the lowest 10MHz of the 70cm band. The authorities don't care that there's little activity right now due to the lack of extended propagation. If they monitor a slab of valuable spectrum like the 70cm band and find little activity, then they'll be very receptive to requests for other uses of that spectrum.

We need to generate some activity. And activity begets activity. How many times have I heard people questioning the usefulness of a 2m SSB rig / horizontal yagi, on the basis that there is no one there to work? But, there is!

So what regular activity is there currently? Well, the morning Aircraft Enhancement Net would probably be the busiest time on 2m at the moment – although even that can be fairly quiet. Most activity seems to centre on 144.1 between 8 am and 9 am during the week and 144.2 on weekends. Gordon VK2ZAB is one of the regulars in this Net and reports a total of 484 contacts with 53 stations for the month of March – not all aircraft-enhanced however.

Furthest distances are 790 km north to VK4DFE and 740 km south to VK3II.

Robbie VK3EK conducts a weekly VK3 net on Wednesday nights at 8.30 pm on 144.150. The net regularly attracts at least a dozen stations from around the state. If demand is there, this net sometimes QSY's to 70cm and 23cm.

Let me know of other regular activity and any other nets around the country.

How do we generate more activity? Well, there seems to be a peak of activity on Sunday mornings. Is there a need for a Sunday morning 10 am net that would also relieve the TVI issues that some country stations cannot avoid? Is anyone keen to re-introduce the Scrambles that used to run many years ago? What other ideas do people have?

As they say, **Use it or Lose it**

Advanced Refractive Effects Prediction System (AREPS)

Further to the AREPS information in February AR, I have added a few examples from the AREPS Software from a Duct opening which occurred in the morning of 31.10.02.

This opening began at around 2 am local time or 1500Z and finished at around 7 to 8 am or 2100Z. The higher stations (2 m FM Repeaters) came in earliest and were last to disappear, the usual process as the Duct falls to its lowest levels and then rises again.

The Duct covered a very wide area to the west of my QTH near Wagga Wagga NSW, covering repeaters around Adelaide and eventually to the Port Lincoln area repeater on 146.750 which is a 1019 km path.

Unfortunately at that stage I only had a mobile 2 m rig set up inside and a 5/8 wave vertical base antenna at 30 ft. When you are in a Duct it doesn't take much to get the signal through.

The graphs are only one output of the AREPS program. The graphs are a cross section of the Troposphere from Sea level up to 4000 metre, and show propagation anomalies present at the time the data was recorded.

There are two sides in the graphs, the left side is a view of the Troposphere, the right side shows the height and thickness of any Ducts present.

From East to West (left to right below, the graphs are over Wagga, Adelaide, Woomera, Eucla and Esperance.

The actual Duct layer is at a similar height and thickness over each location, but does vary. At Esperance, which is a lot further away, it appears the duct is still present but to a much lesser extent.

One thing to keep in mind is that the data used to produce these graphs was taken at 0000 UTC or 11am EST. This is well after the opening had finished at my location, and the majority of the graphs show the Duct somewhere between 600 and 1000 metre at this stage. You must assume that the Duct was at a lower level or at ground level during the previous hours while the Duct was usable, and has then slowly risen higher and higher as the morning progressed. It therefore becomes clear, that you can see that the antenna was in the duct, and then as the Duct moved higher and signals got weaker and weaker until the Duct was too high to use.

Download the AREPS software at http://sunspot.spawar.navy.mil/2858/software/ . The Upper Air data is available at http://weather.uwyo.edu/upperair/sounding.html .

The homepage of the Space and Naval Warfare Systems Center, Atmospheric Propagation Branch, where the AREPS program is produced is located at http://sunspot.spawar.navy.mil/2858/ and this site would be an interesting read for all interested in VHF, UHF and microwave propagation.

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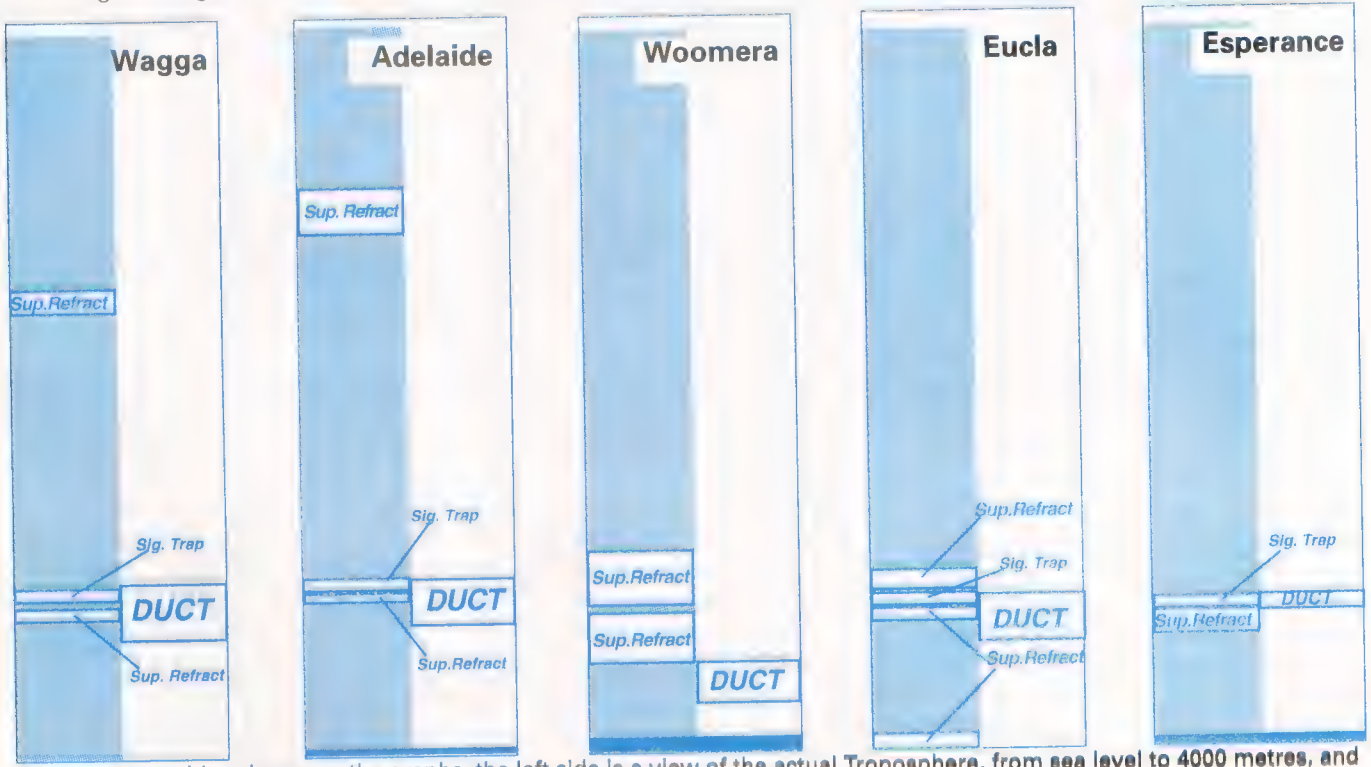


There are two sides shown on the graphs, the left side is a view of the actual Troposphere, from sea level to 4000 metres, and the right side shows the height and thickness of any Ducts present.

More VHF UHF foot of next page

Education Notes

Ron Smith VK4AGS
Federal Education Co-ordinator

"Write it Down, or Smother it in Words"

I have mentioned how any exam or assessment system involves the same series of decisions. There is also a significant level of unavoidable subjectivity. To complicate matters, any system has errors and inaccuracies which can vary over time and geography. What varies in all of this is; when, where, and by whom. This article continues our look at examinations and the methods of teaching and assessing how people learn. It also covers how we try to measure what has been learnt.

For a very long time exams in most areas of education involved writing extended answers to questions. This was true for amateur radio examinations up until the current system came into vogue. Extended answer systems have their supporters and are extensively used in some areas of education where they are making a comeback.

Supporters argue that extended answer examinations allow assessment of a wide range of human abilities, particularly where logical argument to show understanding is involved. They also argue that candidates are given opportunities to demonstrate creativity. Extended answer examinations are certainly not resource hungry when it comes to setting or designing

Unfortunately there are problems. The main one is that extended answers require a highly knowledgable and skilled marker. Candidates can write a range of acceptable answers, so the marking is subject to the interpretation of the marker, a high level of subjectivity. Even when there are so called marking schemes the level of subjectivity is high, even higher with a large number of candidates and several markers.

Another significant problem is that the marking process can take an extended time and since it requires specialists this can also be costly. To complicate matters a good answer requires a good ability at written language which can mask technical knowledge and raise all sorts of issues in a multicultural society.

Historically, education systems went considerably, but not totally, away from extended answer questions in the late sixties, early seventies.

The main reasons for this were associated with a falseness about the examinations. Although the questions were expected to reveal a wide range of human skills, in reality the range of allowable questions was limited. Many students simply learnt by rote a number of standard answers without any understanding. There were allegations of bias in the actual markers as well as allegations of changing standards from one examination session to the next.

These feelings of subjectivity were then considered to be not acceptable. Similar allegations were made within amateur radio, although the high level resources needed to mark the exams was a major factor in deciding to change the amateur radio examination style.

The difficulties were real but, within the wider education system, it was not as big a problem as expected. Then the awarding of certificates was based on a ranking system, not a standards system. Extended answer systems could produce ranking lists, even if they were not wonderfully accurate, about as well as other examination systems.

Last time I wrote how the so called objective or multiple-choice examinations had accuracy problems, had subjectivity, had limitations in a standards system, but had resource advantages after the event but not before. One of its main competitors, extended answer examinations, also has accuracy problems, also has subjectivity, also has limitations in a standards system, but has resource advantages before the event but disadvantages afterwards.

Is there any ideal system? As this series of articles continues I suspect you will find that there actually isn't a single examination type which is ideal. Before we explore this issue further there are other examination or assessment systems to consider. More of these next time.

VHF/UHF – an expanding world continued

20 GHz World Record Claim Pushed to 30 km

This information from Brian, WA1ZMS:

We took the efforts of Will, W0EOM and Bob KF6KVG with their latest world record of 24.6 km as a challenge to try and better our East Coast efforts on 120GHz. At the same time as Will and Bob were doing 24 km on the band, I was trying an active bias circuit to improve my RX mixers at 120 GHz.

W4WWQ, WA4RTS and I took to the local hills of the Blue Ridge Mountains and managed a few more QSOs on 120 GHz with our best DX being 30.0 km.

Date: April 2, 2003
Time: 05:18z <— it was a late night.
WA1ZMS/4 37-31-19.3 79-30-14.4 FM07fm
W4WWQ 37-21-09.7 79-14-20.3 FM07ji

Distance 30.056 km

A point to note is that as Will and I take turns bettering the other's DX, the oxygen losses will become the limiting factor in all of our efforts.

The loss due to water vapour on this band may be around 0.24 dB/km, but the loss due to oxygen is around 1 dB/km. So for someone to improve a DX record of say 30 km by another 10 km, they will need an improvement of 14.89 dB! (2.49 for free-space loss, 2.4dB for water loss, and 10dB for oxygen loss). The above values assume a typical semi-dry atmosphere. We'll need real QRO power for DX over 60 km.

So...when Will takes the record back by a km or two (and he may already have) it might seem like splitting hairs but the loss per km from oxygen is a major obstacle to overcome and the efforts are not trivial.

Photos and audio files can be found at http://www.mgef.org/zms_120.htm.

Rowland Bruce VK5OU

On the 23rd of January 2003 we mourned the passing of a well liked and respected former President of the S.A. Division of the WIA.

Rowland Bruce VK5OU was born 25 April 1939 in Yorkshire, England. Never one to just sit on the sidelines, he was an active contributor to several organizations in particular Rotary and the WIA and whatever he took on he applied his best to it.

His involvement with the WIA started in 1983 when he became Education Officer, a position he held until 1985.

1985 - 1989 He was Federal Councilor.
1986 - 1990 Vice President
1986 - 1987 D.O.C. Liaison
1986 - 1987 J150 Award Manager
1989 - 1991 QSL Manager
1990 - 1992 President
1992 - 1994 Immediate Past President
1992 - 1994 Director

No problem was too big or too small for him to tackle and he always had an ear and a mind to apply to any problem and could always offer a sensible and workable solution. Although he is best summed up as "reliable, steady and level-headed" he will certainly be remembered for his warm, friendly personality and sense of humour.

His involvement with the WIA spanned a total of 11 years, which represents many hours working for a better WIA. In between his official activities he still found time to work DX and participate in Contests.

Rowland is survived by his wife Pam, son Robert and daughters Kate and Rachel.

To his family and friends we extend our deepest sympathy and hope that the deep loss they feel now will soon subside to warm and happy memories.

Jennifer Wardrop VK5ANW and Bob Allan VK5UL

Ed Mann VK5KAV

"The Advertiser" for Saturday April 5, 2003 included a Death Notice for Edward Thomas (Ed) Mann, VK5KAV, who passed away on April 2 at the Hahndorf Nursing Home after a long illness, aged 83.

Ed had been a fairly active amateur and a member of the Adelaide Hills Amateur Radio Society until some time after he moved from Flagstaff Hill to Woodside, about eight years ago. However, for various reasons his interest declined over the last three years or so and last year he very generously donated virtually all of his equipment to the VK5/8 Division of the WIA, which in turn transferred it to WICEN for its use.

The VK5/8 Council acknowledges Ed's passing and extends its sympathy to his family and friends.

David Box VK5OV

James Thomas (Jim)Cunningham VK4BS

Born in New Zealand in 1927, died suddenly in Brisbane on March 20, 2003,

Resident of Frankston Vic, Lismore N.S.W. and then Russell Island Qld.

Dearly loved husband of Lois (dec). Loved father of Linda (dec) and Dale. - Sadly missed. VK4BS is now silent.

Jim was an avid Amateur Radio participant and there will be many Radio people who wish to know of his passing.

Andrew Hosking,
29 Forth Street, Parkdale, #195, Victoria.

Rex Corthorn VK3VG – formerly VK2VG

Rex Corthorn, VK3VG, formerly VK2VG, died on the 6th February 2003 at Mallacoota, Victoria, where he and wife, Mollie, had lived in retirement for a number of years. They had been married for 60 years.

Although I had worked Rex on many occasions after WWII when he was VK2VG, we did not meet until 1950 when we were both serving on the R.A.A.F. Active Reserve as Signals Officers at Richmond R.A.A.F. Base.

Rex was licenced in August 1932 and was a member of the pre-war R.A.A.F. Wireless Reserve. He was called up on 3 September 1939 and sent to the Middle East.

On his return he was posted as a Signals Officer to Mallacoota, then an R.A.A.F. Base, then to. New Guinea. After discharge Rex returned to his old wool-buying firm, where he remained for 45 years, becoming Manager and Director of their Melbourne office.

After his retirement, Rex and Mollie went to, live in Mallacoota, his old wartime locality, which he liked so much.

Rex Corthorn was of a very gentile nature, and a true gentleman although he could become strong willed. He was a good friend for 53 years. Rex was 89 years of age. He will be sadly missed by Mollie, daughter Helen and family, and friends.

Vale Rex Corthorn VK3VG/VK2VG

Ben Mills VK2AJE

Les Daniels VK2AXZ

I regret to advise that Les Daniels VK2AXZ passed away on Wednesday 29 January 2003 after spending several weeks in the John Hunter Hospital.

Les was born at Minmi in 1925 and lived in the Newcastle area all his life. He was a long-standing member and solid supporter of Westlakes Amateur Radio Club.

Les was an avid rag chewer on the VHF and HF bands, he was also a keen fisherman, an accomplished golfer, a good chess player, a talented artist, and in his younger days, an amateur boxer.

He surprised his friends, and perhaps himself, when he married for the first time three years ago. He often commented that the best two decisions made in his life were early retirement and his marriage. Deepest condolences are extended to his widow, Rose.

A large contingent of relatives, friends and Westlakes Club members paid their final respects to Les at the funeral service held at Broadmeadow on 31 January 2003.

The old, now closed heritage listed cemetery at Minmi is his final resting place.

Vale Les Daniels VK2AXZ.

Submitted by
Greg Smith VK2CW

VK1 Notes

Forward Bias

Peter Kloppenburg

It is not too late to take a trip to yesteryear! An exhibition of domestic radios is on show at the Canberra Museum and Gallery until Sunday, June 1, 2003. The exhibition is aptly titled "When Radio Ruled The Waves", considering that broadcast stations were the main source of information, news, and entertainment between the early twenties and the middle fifties, after which television broadcasting took over these roles.

The exhibits include factory built and home made crystal receivers, early valve operated broadcast receivers, car radios, and modern mantel radios. For those of us who made a living from repairing radios and got to know the peculiarities of all the different makes that were sold in Australia, this is indeed a fascinating trip into the past. All the major manufacturers are represented, such as RCA, AWA, HMV, Philips, and Astor. With the increasing number of people becoming familiar with broadcast radios and transmitters, amateur radio came into its own as well. Amateurs built their own receivers using simple triode valves, wound their own coils, and constructed tuning capacitors using brass shim materials. The guest curator of the exhibition is Richard Bigbie, who is well known in the circles of the 'Historical Radio Society of Australia', and a local collector and restorer of antique and veteran radios. Richard has a vast collection of early radios, and it was he who provided several samples of them, from 1914 and 1923, on December 12, 2002, when the University of Canberra celebrated Marconi's achievements with an open day.

Much interesting gear was on sale at the Trash & Treasure on Monday, March 24, 2003 in the Scout Hall in Farrer. Russell Manning (VK1ZRM) offered microwave accessories, such as cables, plugs, dummy loads, and circuit boards with gold plated components. Richard Elliott (VK2KDE) made a splash, with bags containing assorted components for the home brewer. Other members brought telegraph equipment, low voltage/high current power supplies, wide-band oscilloscopes, and PC monitors, all at bargain basement prices. During the break, Gilbert Hughes (VK1GH) gave an outline of the Foundation Licence that is now current in the UK. Gilbert quoted some very impressive statistics regarding increases in membership numbers of the RSGB.

At the Federal Convention of 4-6 April, a decision was made to adopt the UK Foundation Licence into the Australian licensing scheme. The WIA will start the process of convincing the Australian Communications Authority of the benefits of including this licence into its licensing scheme at the earliest opportunity.

The next general meeting will be held on Monday, May 26, 2003 at Scout Hall, Longerenong St. Farrer, at 8.00 pm. Cheers

VK2 Notes

Pat Leeper VK2JPA

The Annual General meeting of the NSW Division was held on 12th April at Amateur Radio House in Parramatta.

A total of 40 voting members were in attendance, thus ensuring a quorum.

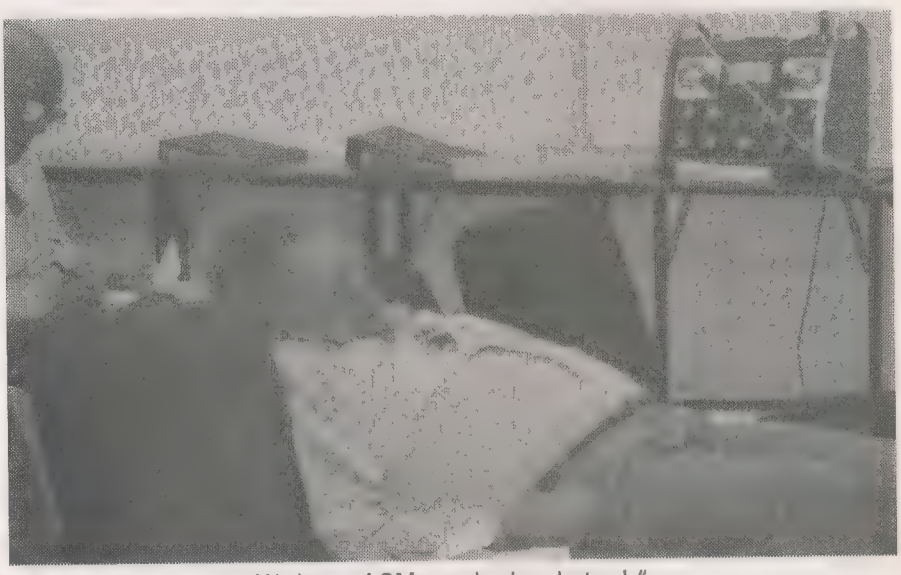
Peter O'Connell VK2EMU announced the new councillors for 2003-4. There were only 8 nominations so there was no need for an election.

They were
Terry Davies VK2KDK,
Owen Holmwood VK2AEJ,
John Turner VK2WRT,
Brian Kelly VK2WBK,
Chris Flak VK2QV,
Terry Ryeland VK2UX,
Michael Corbin VK2YC and
Noel May VK2YXM.

Peter O'Connell VK2EMU was re-elected as Returning Officer, with Kevin Dawson VK2CKD Alternate Returning Officer.

Three motions on notice were dealt with by the meeting.

1. "That the Institute reinstate the system of handling deceased estates that existed before the present system was introduced" - carried: 127 for; 28 against 7 abstain (proxies counted for this motion).



We know AGMs are boring, but —I "

2. "that the NSW Division of the WIA actively consider the consolidation of operations in expanded facilities at Dural" - As the wording of this motion was slightly amended from the floor, proxies were not counted. The motion was carried: 37 for, 1 against; 2 abstain.

3. (last sentence, para. 1) of motion was amended) "During the life of the DCC (Dural Consolidation Committee), the incumbent Councils shall consider the DCC's policy recommendations in all matters relating to the consolidation at Dural". Again proxies could not be counted and the motion was carried: 36 for, 2 against, 1 abstain.

The four members elected to the Committee were Stephen Pall VK2PS, Eric VK2EFY, Eric VK2KUR, and Peter VK2BPN.

We wish all those elected to the various positions a successful tenure.

That's all from me folks – Pat Leeper VK2JPA signing off.

VK3 Notes

WIA Victoria web site: www.wiavic.org.au
email: wiavic@wiavic.org.au

By WIA Victoria Councillor, Barry Robinson VK3JBR

Attending the WIA Federal Convention in Adelaide as part of the WIA Victoria delegation, accredited Observer, was an interesting and rewarding experience. It was my first direct involvement in the federal arena and first hand look at the decision making that occurs.

Clearly each WIA Division prepares differently for this annual event. The VK3 delegation's preparation included a meeting of the WIA Victoria Council in the week before the Federal Convention to review the entire agenda, each of the reports to be tabled, and the consultation input received from members to the six policy motions that had been published on the website.

Held over three days the Federal Convention is potentially an exhausting event for those individuals fully involved. WIA Victoria paced itself by sharing the workload between its three delegates.

Our Federal Councillor, Jim Linton VK3PC, called a team meeting before the start of each day to review the agenda, share any information gathered from other delegates, and do some last minute forwarding planning.

This also meant that the Alternate Federal Councillor, Peter Mill VK3APO, and myself had specific agenda items to talk on, or question, when they discussed around the table. All three delegates were also free to express their viewpoints at any time, and they did.

The major achievements were two new WIA policies that have the potential to result in a much better future for the Amateur Radio Service in Australia. These were that there be an Entry Level Licence, and the licence structure next year be a two-tier system - Entry Level, and Unrestricted. The WIA Victoria delegation played a leading role when these matters were debated.

A WIA Victoria motion seeking to avoid an unnecessary delay in the removal of the mandatory Morse code tests in amateur licensing in Australia, was strongly supported. It is now WIA policy to seek assurances from the ACA that it will not delay the end of the Morse code requirement that is anticipated to result from the World Radio-communications Conference this year.

The WIA journal, Amateur Radio was discussed. WIA Victoria will conduct a three month trial of providing an electronic version of it to its members registered for the Members Section of its website. If you have email and are not registered, please do so and take part in the trial.

A decision will then be made, after the trial, as to whether AR magazine will be issued electronically to WIA members as a membership service, either to replace the printed magazine, or in addition to it.

One of the detailed presentations made at the Federal Convention was by Brian Clarke VK2GCE, Chair of the WIA Strategic Planning Committee. He says the WIA needs to act like any business or service organisation and dramatically increase those buying its services and joining as members.

The initial emphasis of the review in creating a single national body is no longer the flavour of the month. The WIA is working towards making the WIA Federation even more effective and responsive.

Resulting from the Federal Convention, WIA Victoria has a lot of work ahead of it. Apart from the trial of AR magazine via the Internet, there is a survey, which has now begun of radio amateurs to measure their views about the proposed new Entry Level Licence that could begin in early 2004.

WIA Victoria AGM

A reminder that the annual general meeting will be on Thursday, 22 May 2003.

A formal notice has been issued to members. Those who were financial as at 31 March 2003 also received a ballot pack. The three year term of office for the WIA Victoria Council concludes at the AGM.

The second batch of inductees to the WIA Victoria Elmer Hall of Fame will also be announced at the AGM. To make a nomination email wiavic@wiavic.org.au and please put "Elmer" in the subject line, or write to: Elmer Hall of Fame, WIA Victoria, 40g Victory Boulevard, Ashburton 3147.

If you can, come along and meet the candidates for the 2003-2006 Council, and show support for your organisation.

VK7 Notes

Justin Giles-Clark VK7TW

QRM

In this my first contribution to this section and I would like to thank Ron Churcher VK7RN who has been keeping us informed of the VK7 Divisional happenings since May 1998, many thanks Ron, for a job well done.

Divisional AGM

The Divisional AGM was held on 15 March 2003 at Kingston about 10 km from Hobart. The Divisional Office Bearers for 2003 are:

Executive:

President: Phil Corby (VK7ZAX)
Secretary/Treasurer:
Dale Barnes (VK7DG)

State Councillors:

Ron Churcher (VK7RN) Steve Jones (VKZSJ) Allen Burke (VK7AN) Phil Corby (VK7ZAX) Geoff Wells (VK7ZOO) Dale Barnes (VK7DG) Kevin Burgess (VK7BK) TBA

Ex-Officio Officers

Awards Manager:
John Bates (VK7RT)
Broadcast Officer:
Justin Giles-Clark (VK7TW)
Assistant Broadcast Officer:
John Rogers (VK7JK)
Education Officer:
Reg Emmett (VK7KK)
Federal Councillor:
Phil Corby (VK7ZAX)
Historian:
Richard Rogers (VK7RO)
Intruder Watch:
Kevin Burgess (VK7BK)
FTAC Officer:
Rex Moncur (VK7MO)
Membership Officer:
Dale Barnes (VK7DG)
Membership Officer (Recruitment):
Allen Burke (VK7AN)
Public Officer:
Dale Barnes (VK7DG)
Honorary Solicitor:
Phil Corby (VK7ZAX)
QRM Editor:
Justin Giles-Clark (VK7TW)
QSL Bureau:
John Bates (VK7RT)
Web Master:
Robert McKenzie (VK7RB)

A special thank you must go to John Bates (VK7RT) who has been Treasurer since 1999 and Secretary/Treasurer since 2000.

Branch Meetings

Rex Moncur (VK7MO) has been doing the rounds of the Southern and North West branches talking on the Cape Hauy DXpedition (as outlined in QRM last month and featured in this edition) and airing his thoughts on implementing and assessing the new EMR regulations. The talk notes and assessment form have been made available on the VK7 Division website for amateur use.

In the North West branch Terry Ives, VK7ZTI has been showing members around the Moina power station in the Mersey-Forth hydro scheme. The Branch also held their annual March BBQ in Ulverstone.

The Northern Branch held a couple of "members and partners" dinner meetings in Launceston with speakers from the Weather Bureau and on topics such as "Drug Awareness in Australia".

The Southern Branch has been entertained by Mr David Edwards, an Engineer from the U of T talking about the Fred "Pop" Medhurst (A7AH) empire, a true Tasmanian radio pioneer. The branch also held a broad discussion about the different entry-level licence models.

Travelling around Tassie?

If you are travelling in Tasmania and are around when a branch meeting is scheduled then you are most welcome.

Southern Branch

Meetings are held on the first Wednesday of every month at 20:00 in the Queen's Domain clubrooms. The clubrooms are the former OTC Marine Radio station at the very top of the Queen's Domain in Hobart.

There is a social afternoon each Wednesday from approx 12:00 until 16:00 at the same venue. Call in and have an "*eyeball ragchew*" and share your experiences. You are welcome.

Northern Branch

The Northern Branch meets monthly on the second Wednesday of the month at the Institute of TAFE, Alanvale Campus, Block B, Launceston at 19:30.

North West Branch

The North West Branch meets monthly on the first Wednesday of the month at Penguin High School, Penguin at 19.30.

73, Justin Giles-Clark VK7TW

Club Notes

VK3IRL, the callsign of BASS amateur Radio IRLP group Node 6330

In December last year we had a request from the YL International IRLP Net for our node to link up and take on the YL net in Australia.

The outcome of the request, made through Elizabeth VE7TLK– Glenna VE7DSCis that it has been picking up momentum with other nodes worldwide with more joining in.

After all, this is an opportunity for the YLs to make a contact and be able to use their radios. Our group would love to have those YLs who could make themselves available on a regular basis become members and be the net controllers in Melbourne.

The YL International IRLP Net goes to air on the 1st and 3rd Tuesday of each month, starting at 10.30 am local time for check-ins and crosses over to the net in Canada at 10.45am .

For more information look up the internet http:// www.barirlp.cjb.net or www.qsl.net/vk3irl.

At last... The mast...

Last month I finally got around to repairing my antenna system which was damaged in storms late last year.

Repair involved tilting the mast over to the ground and straightening up a few things. While it was easily accessible I decided to do a bit of preventive maintenance.

As it turned out the beams, polarity switching relays and rotators were in very good condition. In fact, apart from a few minor adjustments the whole installation checked out OK. That's not bad considering the AZ/EL system has been in operation for over 10 years and in that period has withstood the rigors of moving QTH and several wild storms.

The beams are KLMs and the rotator is a Kenpro. I checked out the co-axial cables with the wonderful little gadget described by Geoff VK2ZAZ in the Amsat-VK newsletter No.65 back in 1990. I re-visited Geoff's article in this column in November 2000. The gadget is essentially an RF voltmeter terminator built around a BNC connector. It can be plugged into one end of a suspect piece of co-axial cable and used to measure losses.

Once again this tiny device proved its worth. The cables checked out OK and it was with a glad heart that the mast was winched back into position.

But the proof of any pudding is in the eating – so – with a fresh set of Keplerian elements in the tracker, the system was fired up on the late evening pass of UO-22.

I was delighted to see the "S" meter swing hard over as the satellite came up over the horizon and it remained there for most of the pass. Within a few seconds a message flashed across the screen telling me that the computer clock had been updated by the clock on the satellite. Having been off-air for so long it took a few minutes to update the directory information but I still had time during the pass to upload a message and send a real amateur radio reply to an email from a friend who I know monitors UO-22 every day.

It was also something of a minor miracle that all the computer equipment still worked. I was reminded the other day of the age of that gear while talking to a friend who likes to keep up to date with his computer gear.

His latest has a processor running at over 2 GHz and is equipped with – believe it or not – a gigabyte of RAM with room for two more GB! It's sobering to realise that all the digital satellite gear is running on an ancient IBM machine equipped with ISA ports. One supports the Kansas City Tracker/Tuner and the other supports the Quorum weather satellite receiver/decoder.

I believe one can still obtain computer mother boards with ISA slots if one tries very hard but many of the younger folk in computer stores these days either don't remember them or just smile sweetly.

It prompted me to think about the current situation of someone wanting to get started in satellite work and how they could quite easily encounter high hurdles on the way. As a consequence I'll put in some time next month preparing a summary of what is currently available in the way of computer controlled trackers that can be used on more modern machines.

The Real Cost of Supporting ARISS

ARISS International Chairman and AMSAT-NA V.P. for Human Spaceflight Programs, Frank Bauer, KA3HDO was asked recently for a cost breakdown for the ARISS program. Here is part of his reply on the AMSAT-BB. It makes interesting reading:

"The ARISS Budget discussion of the Board of Directors meeting is located on page 22 of this edition of the Journal. In it, I state that NASA has contributed approximately $150,000 in real dollars last year for ARISS related activities. The bulk of this funding goes to getting the internationally-based amateur radio hardware safety certified to fly on the Shuttle and the ISS. It also funded a portion of the development hardware, particularly the antenna systems, and the development of some educational and outreach materials that the team is using to promote the program.

AMSAT-NA has contributed approximately $34,000 last year to the program. The bulk of this ($18,000) was for travel. Since this is an international effort, face-to-face coordination is a must. The ARISS team had 2 international meetings in 2002 and we supported a very important trip to Russia. We also had several travel trips to NASA Johnson Space Centre to support several mission-critical activities.

The other big item in the budget is components - i.e. hardware development. Please read the January/ February 2003 Journal to see what we did last year. We did a lot last year. This included the delivery of the 4 antenna systems, supporting 3 EVAs (Spacewalks), the IMAX Film debut, many school group contacts, and a balanced ham radio program.

The other item that was discussed in the board meeting that should be addressed here is my assessment of the worldwide amateur radio volunteer support to ARISS. I stated that the amateur radio community is contributing approximately $5 million towards the ARISS program. This contribution assessment is not real dollars, but the volunteer time and talent contributions that the international community invests into ARISS. The space agencies look to metrics (measurements) to understand how a program is performing. One metric that they look at is the investment made by

the partners in an activity. We have a real-dollar investment and we have a volunteer time and talent contribution to the program.

How did I reach this $5 million contribution investment? *I estimated the number of hours spent by the international team to perform its duties and used standard aerospace cost estimation numbers to reach the numbers above. We have a number of countries involved in ARISS. We have had to develop a lot of hardware (flight, flight backup, training, etc).*

Performing school contacts requires a big, local team that works together for weeks to make the contact a success and to make it meaningful from an Educational perspective. We have a large team that is working with the space agencies to schedule these contacts and to coordinate with the local school volunteers. We have several weekly international teleconferences to make sure the program is on-track and moving forward. As you can see, there is a lot going on internationally. When AMSAT or universities quote a satellite development cost, they never include the equivalent volunteer time contribution. They don't have to because they are not a partner with the space agencies in a program like ARISS.

Now, I am sure a question that will be asked is whether this investment is worth it? The ARISS program inspires students to pursue careers in math and science and to become ham radio operators. These aren't just words. I have seen it happen. The students never forget this event. The teachers are inspired for years to come and several install amateur radio stations in the schools permanently.

There are two major shortages that are affecting us as a nation and as a worldwide community. These two shortages are the lack of young people in the amateur radio hobby and the lack of students pursuing science and math careers. The ARISS international volunteers invest so much time ($5 million worth) because they believe in the program. They are inspired by the students, by the astronauts and by our ability to fly hardware on one of the most complex engineering projects known to humankind.

They know that they are making a difference in growing the amateur radio hobby and getting students inspired in math and science careers. Please understand that my definition of an ARISS volunteer is anyone, worldwide, that helps support the ARISS program and its ideals. It includes the ARISS international delegates, the AMSAT-NA volunteers, the volunteers from all the international countries that make ARISS happen, our Russian colleagues led by Sergej Samburov, the ISS Fan Club, and hardware development teams such as the MAREX team, the Naval Academy team, AMSAT-Italy, etc.

Thanks Frank, I know that will be of interest to the many Australian volunteers who have given time to the ARISS project and its predecessors over the years. It may also serve to inspire others to take part in what is a huge international effort that does Amateur Radio proud.

Shuttle disaster delays some ARISS Activities

The entire space shuttle fleet has been grounded pending the oUTCome of the inquiry into the Columbia disaster. This has had an impact on the ARISS program.

More from Frank Bauer. Bauer says that the only major setback for ham radio so far concerns upgrading the ISS ham station itself. With the shuttles not flying, consumables like food and water are the highest priority items to be launched on the upcoming Progress re-supply missions. This means that the ARISS hardware that was planned to be flown this year will probably be delayed. The gear waiting for transport includes the Slow Scan Television equipment, plus Kenwood D700 and Yaesu FT-100 radios and the Naval Academy's PC Sat 2 ham satellite. Bauer says that this equipment will be kept ready for any upcoming transport flight opportunities to the ISS. The good news is that the opportunities for school contacts will remain the same. Look for them at a rate of at least two a week. Maybe more if the Expedition 7 crew finds itself with extra free time. For the latest ARISS announcements and news, visit the ARISS news website, http://www.amsat.org/amsat/ariss/news/arissnews.txt

And for a list of scheduled school contacts,

http://www.amsat.org/amsat/ariss/news/Successful_ARISS_schools.rtf

Secretaries Please Note

***Club Notes* and *Division News* are in *AR* for the benefit of your organisation and amateur radio.**

Please use the facility and advance the hobby by providing us with information about your activities.

AMSAT group in Australia.

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net.

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000utc with early check-ins at 0945utc. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900utc with early check-ins at 0845utc. All communication regarding
AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park, SA. 5034

Graham's email address is: vk5agr@amsat.org

Contest Calendar May - July, 2003

May	3	IPA Contest (CW)	
May	3/4	10-10 Intl. Spring QSO Party	
May	3/4	ARI International DX Contest (All)	
May	4	IPA Contest (SSB)	
May	10/11	Volta RTTY DX Contest	
May	10/11	CQ-M International DX Contest (CW/SSB/SSTV)	
May	16/17	Anatolian WW RTTY Contest	
May	17/18	King of Spain Contest (CW)	
May	24/25	CQ WW WPX Contest (CW)	(Mar 03)
May	24	VK/trans-Tasman Contest (SSB)	(Apr 03)
May	31	QRP Day	
Jun	7	VK/trans-Tasman Contest (CW)	(Apr 03)
Jun	7/8	ANARTS WW RTTY Contest	
Jun	7/8	WW South America Contest (CW)	
Jun	14	Asia-Pacific Sprint (SSB)	
Jun	21/22	All Asian DX Contest (CW)	
Jul	5	Jack Files Contest (CW/SSB/PSK31)	(May 03)
Jul	5/6	Original QRP Contest (CW)	
Jul	19	Pacific 160 Metres Contest (CW/SSB)	
Jul	19	Colombian Independence Day Contest (CW?SSB?RTTY)	
Jul	26/27	Russian RTTY Contest	
Jul	26/27	Venezuelan Independence Day Contest (CW)	

Jack Files Contest 2003

from John Spooner VK4AJS, Contest Manager

Saturday 5 July, 2003
0800z – 1400z

This contest is sponsored by the WIAQ Division and is in honour of the late Jack Files, a long-serving VK4 WIA councillor.

Object is for amateurs to work as many other amateur stations, and particularly as many different VK4 shires and towns, as possible.

Date: Saturday, 5 July, 2003

Time: 0800UTC – 1400UTC in six one-hour blocks for the purpose of duplicate contacts.

Band: 80 metres only. Use 3.5MHZ – 3.7MHz to put all licence grades on an equal footing.

Modes: Either CW; SSB; PSK31, or All Modes

Categories: Single Operator; Club Station

Exchange: Non-VK4 stations will send RS(T) plus serial number starting at 001 and incrementing by one for each contact. VK4 stations will send RS(T), serial number and two-letter shire or town code for purposes of multipliers.

Score: One point per contact

Multipliers: Each VK4 Shire or Town counts as a multiplier.

Final Score is total QSO points X total number of multipliers.

Repeat Contacts: In order to make best use of the band, stations may be contacted once in each hour on each mode. These repeat contacts must not be consecutive.

Logs must show full details of all QSOs and must be accompanied by a Summary Sheet showing operator's name; address; callsign; category and mode entered; claimed score and a declaration that the rules and spirit of the contest were observed.

Send logs by mail to: Files Contest Manager, PO Box 1006, Yeppoon, 4703. Logs may be sent by e-mail in text format to: vk4ajs@optusnet.com.au

Closing date for all entries is 7 August, 2003

Certificates will be awarded to the top scorers in each mode in each VK State, ZL, P29 and any DX country (i.e. country outside VK, ZL or P29).

continues over

A correction to the results for the November 2002 Field Day: VK3AEF operated from QF04 and the fourth operator listed should have been W. Day, VK3SWD.

JACK FILES CONTEST 2003

VK4 City/Town/Shire Codes

A	AC	Aramac;
	AL	Albert;
	AN	Arakun (R);
	AT	Atherton;
B	BA	Banana;
	BC	Barcaldine;
	BD	Bendemere;
	BE	Burnett;
	BG	Biggendon;
	BH	Bauhinnia;
	BI	Bungil;
	BK	Burdekin;
	BL	Baloone;
	BN	Brisbane;
	BO	Barcoo;
	BP	Bulloo;
	BQ	Booringa;
	BR	Burke;
	BS	Broadsound;
	BT	Beaudesert;
	BU	Bundaberg;
	BV	Boonah;
	BW	Bowen;
	BX	Blackall;
	BY	Belyando;
	BZ	Boulia.
C	CA	Caloundra;
	CB	Caboolture;
	CD	Cardwell;
	CF	Clifton;
	CH	Chinchilla;
	CK	Cook;
	CL	Calliope;
	CM	Cambooya;
	CN	Crows Nest;
	CP	Carpentaria;
	CR	Croyden;
	CS	Cairns;
	CT	Charters Towers;
	CY	Cloncurry;
D	DG	Douglas;
	DI	Diamantina;
	DL	Dalrymple;
	DU	Duraringa.
	DY	Dalby;
E	EA	Eacham;
	ED	Eidsvold;
	EK	Esk;
	EM	Emerald;
	ET	Etheridge.
F	FL	Flinders;
	FZ	Fitzroy.
G	GC	Gold Coast;
	GD	Gladstone
	GH	Gayndah;
	GI	Goondiwindi
H	HB	Hervey Bay;
	HK	Hinchinbrook;
	HT	Herberton.
J	JE	Jericho;
	JO	Johnstone;
	JY	Jondaryan.
K	KG	Kingaroy;
	KK	Kilkivan;
	KO	Kolan.
L	LA	Laidley;
	LC	Logan;
	LO	Longreach;
	LV	Livingstone.
M	MA	Mareeba;
	MB	Maryborough;
	MC	Mackay;
	MH	Murweh;
	MI	Mt. Isa;
	MK	McKinlay;
	ML	Milmerran;
	MM	Mt. Morgan;
	MN	Minrani;
	MT	Monto;
	MU	Mundubbera;
	MV	Miriam Vale;
	MX	Murilla;
	MY	Murgon.
N	NE	Nebo;
	NN	Nanango;
	NO	Noosa.
	PD	Peak Downs;
	PR	Pine River;
	PT	Pittsworth;
	PY	Perry.
Q	QL	Quilpie.
R	RC	Redcliffe;
	RD	Redland;
	RH	Rockhampton;
	RI	Richnmond;
	RM	Roma;
	RO	Rosalie.
S	SA	Sarina;
	ST	Stanhope.
T	TA	Tarra;
	TE	Torres;
	TM	Tarcoom;
	TY	Townsville.
W	WA	Warwick;
	WC	Woocoo;
	WD	Wondai;
	WG	Waggamba;
	WH	Whitsunday;
	WI	Winton;
	WO	Wambo;
	WR	Warroo.

(R) = restricted area for radio transmission (Shire entry permit required).

2003 Wadda Cup Contest

The Central Highlands Amateur Radio Club of Tasmania (CHARCT) will hold the 2003 80m Dash for the Wadda Cup on 21 June 2003.

The contest manager for the 2003 80 m Dash for the Wadda Cup is Keiran Blyth VK3BTV (winner of the 2002 event). As entrants found in the inaugural 2002 event, one major difference from other sprint type contests is that at the end of the 80 m Dash, a score roll call will be held to reveal the provisional winner of the Wadda Cup. The 2002 event was a closely fought affair. The winner's margin was just 2 points.

In keeping with the spirit of making the contest interesting and up to date, there are a number of changes to the 2003 event, including extending the contest time from 30 minutes to 60 minutes, inclusion of a SWL section and moving the date to June to give Northern, Central and Western Stations a better opportunity of participation.

Contest bonus

The contest also offers amateurs the opportunity of accumulating contacts for two Tasmanian awards. The CHARCT Tassie Trout Award is available to any amateur that makes contact with 14 CHARCT members. Full details, including the current membership list, are available on the club's website www.vk2ce.com/vk7cht

Also, the Tasmanian Division of the WIA has the Tasmanian Devil Award. Contact with 50 VK7 amateurs is the only requirement on HF. More details are available on the VK7 division website www.tased.edu.au/tasonline/vk7wia

Contest aims

- Encourage on air activity in a short, friendly contest.
- Provide amateurs with the opportunity of accumulating contacts for the Tassie Trout Award and the Tasmanian Devil Award.
- Encourage entry by first time contesters.
- Promote on air activity of VK7 amateurs. (The old mug might just return to Tassie).

The complete Wadda Cup rules are as follows -

Contest date and time

The contest will be held on Saturday 21 June 2003. The contest will be 60 minutes duration. The start time is 1030 UTC (8.30pm EST) until 1130 UTC (9.30pm EST)

Pre-contest announcements

The contest manager will operate as VK7CHT/3 (CHARCT club callsign) during the contest. Contact with VK7CHT/3 will earn 2 bonus points. VK7CHT/3 will not be eligible for the Wadda Cup or any contest award certificates.

All contestants are asked to listen on 3.585 MHz (+/-), 15 minutes prior to the start of the contest. CHARCT President Bob Geeves, VK7KZ, will give a short address and officially launch the 2003 80 m Dash for the Wadda Cup.

VK7CHT/3 will give a time check, on this frequency, 2 minutes before the start time.

Wadda Cup

General rules

1. The contest is open to all VK amateurs.
2. A station may only be worked once during the contest.
3. Sequential numbers, commencing at 001, shall be given and received for all contacts made during the contest. (RS numbers are not required).
4. The contest is phone only, using LSB on the 80 m band. Frequencies to be used are from 3.540 MHz to 3.625 MHz.
5. Maximum power is 100 watt.
6. Entry categories -
   a) Single operator entries only. No multi-operator entries are allowed.
   b) Short wave listeners (SWL).
6. The winner of the 2003 Wadda Cup will be the contest manager for the 2004 event. (This is not a great chore and there is plenty of support available for the contest manager through CHART). The Wadda Cup contest manager's guide will be made available and the guide details everything that the contest manager needs to know on conducting the Wadda Cup Contest.

Scoring

Category a)

i. Contact with any VK amateur scores 1 point.

ii. Contact with VK7CHT/3 scores 1 contact point plus 2 bonus points = 3 points.

Category b)

i. All recorded contacts score 1 point

ii. VK7CHT/3 may be recorded more that once, however, the 2 bonus points may only be counted once.

The contact and move rule

1. After calling CQ contest and establishing a contact, the calling station must move their calling frequency by at least 5kHz.
2. A station answering a calling station may make one call on the same frequency and exchange numbers with another station. The calling station must then move their calling frequency by at least 5kHz.

Example - VK7VH calls CQ contest on 3.560 MHz. VK7KZ answers the call and exchanges numbers with VK7VH. When the contact is completed, VK7VH must move frequency by at least 5kHz. VK7KZ may then call CQ contest on 3.560 MHz. VK2CE answers VK7KZ and exchanges numbers. VK7KZ must move at least 5 kHz etc etc.

Logs

1. All participants must keep a separate contest log sheet. Use 4 headings - UTC time, Station worked, Number sent, Number received.
2. SWLs should record UTC time, the call sign of both stations and the numbers sent by each station.
3. Retain your log for checking. You will be advised if your log is required by the contest manager, during the contest call back.
4. The contest winner, 2nd place contestants and all SWLs must send their log, post marked no later than 21 July 2003, to -

The 2003 Wadda Cup
Contest Manager
6 Ranfurle Road
Forest Hill
Victoria 3131

Logs must be legible and show the details required in Rule1 (Rule 2 for SWL) above. Attach a summary sheet showing the entrants callsign, name, address and claimed score. If your log is not received by the due date, you may be excluded from the contest results. You will be advised during the call back if your log will be required as a check log.

The winner

All contest participants are asked to listen for VK7CHT/3 on 3.585 MHz (+/-) immediately after the conclusion of the contest. Add up the number of contacts that you made, during the contest, and if you worked VK7CHT/3 add 2 bonus points to your final score. Follow the on air roll call to find out the provisional winner of the Wadda Cup and other contest award certificate winners.

1. The winner will be the entrant with the highest score.
2. Should there be more than one entrant with the highest score, an on air count back will be conducted by the contest manager. The count back will be based on the number of contacts made during specific time blocks. Although the count back procedure will be decided prior to the contest, details will only be revealed during the count back.
3. The provisional winner and 2nd place contestants will be declared official when logs have been received and checked by the contest manager.
4. The contest manager's decision will be final.

The awards

1. The winner will be awarded the Wadda Cup, suitably engraved, for a period of 12 months. The Wadda Cup is a classic silver cup and has become known as the "Old Mug". The winner will also receive the first place award certificate.
2. All 2nd place and 3rd place contestants will receive an award certificate.
3. The highest SWL score will receive a special contest award certificate.

Results

When the contest manager has verified all logs, the results will be published on the CHARCT website. Results will also appear in Amateur Radio magazine.

This year's event has been expanded to encourage participation from all VK amateurs and SWLs. The format of last year's contest was enjoyed by all and the time expansion from 30 minutes to 60 minutes should encourage participation from amateurs that are familiar with sprint type contests. The date and time change will better suit entrants from VK4, VK5, VK6 and VK8.

Whether you are a keen contester or someone that has not tried contesting before, we encourage you to have a go at this year's event. Have fun during the contest and don't forget to join in the roll call at the end of the contest.

Goodluck

Keiran Blyth VK3BTV, 2003 Contest Manager

The VK/ trans-Tasman Contest 2003 :

This exciting 80 metre Contest will be staged over two nights

Phone:	*SAT 24th MAY*
CW:	*SAT 7th JUNE*
Time	*0800 Z to 1400 Z*

Both nights run for 6 hours, in 1 hour stages, - long enough to be interesting without being arduous, and providing constant activity with stations being reworked each hour. The main emphasis is on contacts between VK and ZL stations, with the scoring structured to give all stations an equal chance, regardless of their location or time-zone.

Bonus points can be earned each hour, and are awarded to encourage trans-Tasman contacts and participation by VK Central and Western zones. As well as Phone and CW, there are QRP Categories, and one for SWL's. An engraved trophy will be awarded to the outright winner, certificates for winners and placegetters in other Categories.

This Contest is not a sprint or a marathon. It will provide 6 hours of non-stop evening entertainment that should not intrude too much on family life or sleep time. So, make a note of the details, and give it a go!

The only thing we ask is that you take the time to submit your log (even if you don't think you will win). This is essential to make it all worthwhile, and to ensure the on-going success of the Contest. Rules were published in the Amateur Radio Magazine April Issue and NZART break-in, and are available on the Contest Webster: http://home.iprimus.com.au/vktasman

Email queries and comment to Contest Manager on: vktasman@hotmail.com

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An Amateur Radio Study Course by Graeme Scott VK2KE

Colwyn Low VK5UE

Graeme has kindly sent me his four book study course for the Novice and Unrestricted Amateur Licences.

Book 1 *'The Novice Operators Theory Handbook'*. Covers basic theory and is the main introduction to all the required study material.

Book 2 *'The Novice Operators Theory Study Program'* is a study guide which is used with each chapter of Book 1 to reinforce the subject matter and assure the students, they have mastered the subject matter.

Book 3 *'Amateur Radio Study Course'* is the bridging course from the Novice licence material in Book 1 to the depth necessary for the AOCP exam

Book 4 *'Radio Amateur Licence Study Guide'* is the study guide for Book 3.

Graeme is a well known Radio Amateur, who works hard to foster the hobby. This course is a further example of his dedication to introducing more people to our great hobby.

I have read through both study books and spot checked the study guides. Steve VK5AIM has also been through them. We agree the books together are a good course of study and are well matched to their goal: – an Amateur Licence for the student. The presentation of the books is good and the layout is easy to read. The style is well pitched to the new student. Several hundred copies of the course have already been sold.

As the author and I both agree no book is perfect (Not even AR) so I have a few comments. The use of abbreviations and the spelling of units are not consistent and there are a few places where material seems to be out of order. However these points should not prevent the student passing the exam.

In summary I could recommend the four book course to all and especially to those preferring to work from hard copy.

All books are available from Megjay Pty Ltd at PO Box 385 Albury NSW 2640. This is Graeme's company and he has been doing mail order for years and loves corresponding with the successful candidates! The prices are: -

Novice Theory $16.00 : Novice Study Guide $10.00

AOCP Theory $13.00 : AOCP Study Guide $10.00

Good Luck with your course.

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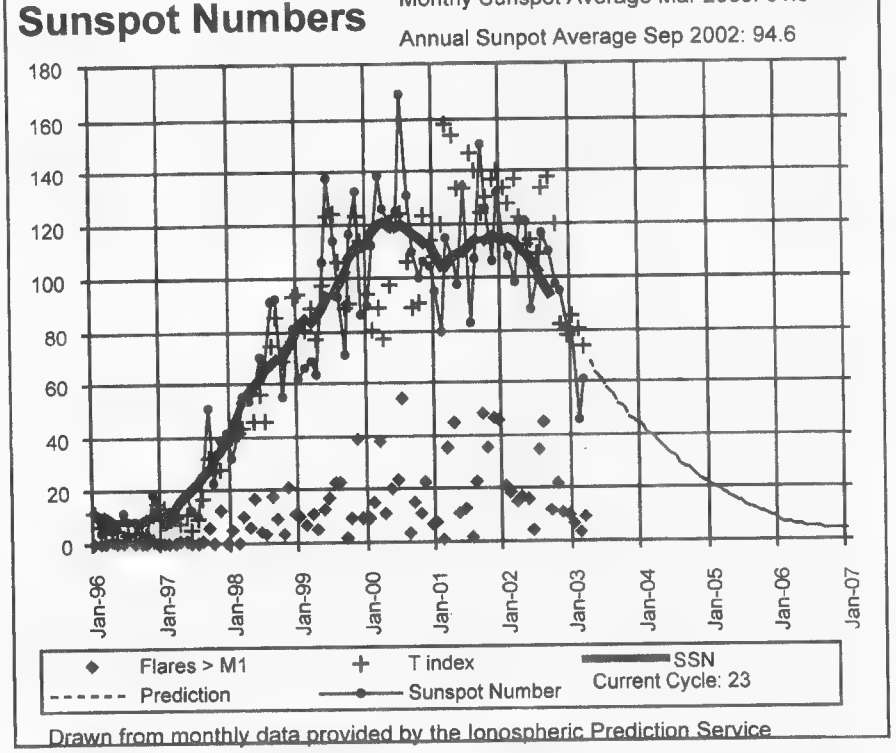


by Robin L. Harwood VK7RH

Iraq and ruin — the takeover of the airwaves

The 21st of March was the deadline was set by the US administration on the Iraqi regime of Saddam Hussein to comply with its directions to completely dismantle their so-called "Weapons of Mass Destruction" or face the consequences.

The deadline passed at 9 pm Eastern Daylight Time which corresponded to 0200 UTC. At 0230 the first air raid took place in the southern suburbs of Baghdad at a reported target of Opportunity with the majority of electronic media relaying a live video feed from Baghdad.

At 0253, Ari Fleisher, President Bush's Press spokesman, came into the pressroom of the White House to confirm that hostilities had commenced and that the President would be making an address to the Nation at 0315.

Unfortunately I was unable to receive anything here in this retirement village at that hour yet I was certainly able to follow developments from the Internet until propagation came in about 0700. All the major international broadcasters had pre-empted their normal programming from when the deadline was first announced.

The major US Military channels had been extensively monitored for many months leading up to this point yet little was given away as communications security was extremely tight. Once hostilities did erupt there was a noticeable increase in traffic but it was very difficult determining where it was coming from.

I must admit I was glued primarily to the television networks in the early stages but relied on shortwave for in-depth analysis and background which was lacking from the jingoistic American TV networks. They were treating it as a live reality TV show, whereas the various international and domestic shortwave broadcasters provided quite a contrasting viewpoint on the conflict.

Many broadcasters were live around the clock with updated reports and news analysis whilst the TV ended up screening the same items because there was nothing to show.

The Americans and British and our small contingent pressed on with sporadic resistance and in 20 days were within Baghdad and there are indications that the Iraqi regime could implode, leaving a vacuum. The Americans have indicated that they wish to have a controlling say on how the new Iraqi government evolves and minimise the involvement of the UN. Strategically the presence of a large American military contingent has altered the balance of Power within the Middle East.

As I did allude in last month's column, I do expect that the Americans will rapidly establish relay bases for their external broadcasts on Iraqi soil. The senders that Iraq possessed were destroyed in bombing raids including the clandestine operation on 7070. We now know that it was based pretty close to Basra in the south and to the Iranian border.

Also expect that the various psychological warfare senders of the Americans and British will eventually become absorbed into the new domestic broadcasting organisations. I did manage to hear "Information Radio" once on 9715 at about 2100. It came in best on USB but the channel is also utilised by many other broadcasters, making reception of this clandestine very marginal

Meanwhile— elsewhere

Germany

Deutsche Welle now based in Bonn, have ceased their English transmissions to Australia and North America and also cut back their German language transmission hours.

This was a highly unusual decision coming at the peak of the Iraqi war. Alternative channels to other areas have been given but they are not as good as the previously targeted broadcasts to Australasia.

One channel of 9720 was useless for a week, due to a lack of co-ordination with the BBC World Service. The Singapore relay was co-channel with their Indonesian service also to Asia. They eventually shifted 10 kHz up, allowing the DW English service from Sri Lanka to be easily heard on 9720.

BBC World and VOA

The BBC World Service in English is now easily heard on 9740 at 2200, which was very welcome after DW's departure. Also the VOA has now shifted down to 9705 from 9760. Iran on 9870 however is co-channel with another Arabic station, possibly R. Sawa from Washington.

Looking forward

Well it is now winter and it is going to be very interesting with fewer broadcasts to North America. This could allow others to be easily heard. As previously mentioned, the digital broadcasting platform, DRM is commencing next month via DW. Others are scheduled to gradually increase their DRM output when more DRM receivers are readily available.

Austria will be continuing broadcasting via shortwave but not from its International service, which has been disbanded. Instead they will relay one of the domestic services as a filler. The senders at Mosbrun are hired out to various organizations such as Adventist World Radio, Radio Canada International plus sundry Ethiopian clandestine broadcasters.

Well that is all for this month. Remember that you can email your news to vk7rh@wia.org.au.

73 Robin L. Harwood

Ham Shack Computers

Alan Gibbs VK6PG
223 Crimea Street, NORANDA WA 6062
Email: vk6pg@tpg.com.au

Part 25 – OpenOffice Review

Scanning through advertisements for affordable operating systems and office software packages suggests that prices are now going through the roof. Even the cost of so-called 'upgrades' can be prohibitive and assumes that users have the earlier version on their computers. Today, the cost of legal software outstrips the cost of a brand new computer system! It's cheaper and easier to upgrade computer hardware, but upgrading the software is another matter – usually well outside the shallow pockets of most Radio Amateurs. There is another way that might just be for you, and it'll cost you nothing!

Open Source Software

For many years, mainframes and servers used by Internet Service Providers (ISP), governments, military, and businesses have been using UNIX and Linux operating systems. Linux (4) is a development of the original UNIX system based upon 'Open Source' (5) - meaning that the raw core code of the software is freely available to other writers and developers. As a result, there are many different derivatives of the Linux operating system. On the plus side, Linux is free of copyright, has thousands of free, add-on, open source applications, and now comes with a 'Windowed' Graphical User Interface (GUI). On the negative side, Linux is generally more difficult to use compared to Microsoft Windows products for newcomers to computing.

Background Brief

Popular software is always being upgraded, requires 'patches', might only work on some systems and not others, needs to be 'registered' before working properly, or is subject to the ubiquitous 'blue screen of death' and won't work at all unless the system is rebooted!

However, most Linux developers have tried to build a solid, trouble free operating system that could be an alternative to the more dominant Microsoft products – AND to offer Linux products free of cost worldwide. Microsoft Office packages have become 'the worldwide de-facto standard' especially if document interchange is effective between users.

Paying over $400 for a full copy of Microsoft XP that can only be legally used on one computer AND has to be registered online has become beyond financial sustainability for many users.

Adding $900+ for the full cost of Microsoft Office XP and the whole concept becomes ridiculous. Readers might argue that these OEM software products (Original Equipment Manufacturer) are cheaper if bought at the same time as purchasing a new computer. This is true to some extent but wait until the next 'upgrade' is due!

Industry Trends

Corporate industries and educational institutions (5) pay huge sums of money for licensed software on servers and personal workstations. Upgrade costs become prohibitive when business activities must be kept efficient, fault free and the productivity must be compatible with the 'Microsoft Office' interchangeability syndrome.

Try sending a WordStar or WordPerfect document to the editor of this publication, a friend or business associate – and wait for their cries for help!

These days, thousands of high school, TAFE and university students need to use computers for their studies. Imagine if the full cost of mainstream software were added to the cost of the computer, study guides, textbooks plus the upfront government HECS fees!

Even the lower cost of 'academic software packages' is still far too expensive for most RA enthusiasts.

Radio Amateurs

Why do most Packet Radio and IRLP nodes use Linux? – because the Linux operating system is free, and usually more stable than other high-priced commercial products. For RAs who experiment with their computer(s), the cost of software exceeds the deepest junk boxes and is beyond those surviving on a tight budget.

Not only do RAs need a stable operating system (without the mandatory encumbrance of 'on-line verification'), but also need to interchange with 'MS Office' for word-processing, databases, spreadsheets, HTML writing and drawing programs.

Open source program writers have produced similar packages to Microsoft Office that run on Linux, Windows, and Macintosh systems.

Examples include OpenOffice (2) and StarOffice (3) each claiming compatibility with Microsoft Office but costing virtually nothing to use. One argument being that today, Microsoft Corporation now has real competition in the worldwide marketplace!

Conversely, try loading Microsoft Office 97-2000 onto a Linux operating system and see just how far you'll get! Thankfully, times are now changing in favour of Open Source software, which benefits all assertive RA's in their quest for continued experimentation and enjoyment.

OpenOffice.org 1.02

Released in mid-2002 as version 1.0, OpenOffice.org is 'taking off' as a major competitor to Microsoft Office in business, education, and especially in

home personal computer systems.

The 'Office' suite includes Write, Calc, and Impress - each similar in operation to MS Word, Excel, and PowerPoint. Whilst there are variations in the 'look-and-feel' of these new programs, most of the GUI controls do much the same.

Downloading OpenOffice (50MB!) can take ages (4 1/2 hours in the writer's case!) with a groggy 56KB dial-up connection, but broadband readers will jump for joy provided they don't over stretch their allocated download monthly ISP limit. Download packet errors can be a nuisance and may cause installation or operational errors, so the alternative is to use OpenOffice taken from popular magazine CD-ROM's (6). In the writer's case, it took just 20 minutes to faultlessly install the suite and test its Write and Calc compatibility using this edition of Ham Shack Computers that you are now reading!

Readers with a few spare dollars can purchase the OpenOffice version 1.02 CD-ROM by post or on-line (4) – but make sure you ask for the Windows compatible version!

Once installed, open Write and look through the functions of each button and the drop down dialogue boxes. Many of the common tasks found in MS Word are common in OpenOffice Write. Open an MS Word document in OpenOffice to see if it imports without error. You'll be surprised at the results! OpenOffice has the options to save documents in the default OpenOffice format, or in MS Word (filename.doc) meaning that the file can be retrieved in MS Word again.

Windows XP users might find that if a .doc file is 'clicked' from My Documents, XP will open the file in OpenOffice instead of MS Word. To fix this problem, right 'click' the filename and select Open with... then choose MS Word. Apart from small differences between the two programs, and some practice,

Write certainly does the job nicely. Calc is almost identical to Excel. Again, search the button functions and you'll be handling spreadsheets like a pro in no time. Both Write and Excel will save in MS formats making interchange with other users very easy, although this is not the case with Coral WordPerfect 8.

The OpenOffice.org HTML Write also does the job well with few exceptions. One problem is that a non-printing hard return in HTML (<BR>) seems impossible without editing in raw code! However, the writer believes that a 'fix' to solve this is not far away.

StarOffice 6.0

Sun Micro-systems offer a similar 'Office' package that has been authored using the same core as OpenOffice, but with a richer operating environment. The cost for the SOHO suite is US$75, and US$25 for the academic version. Registered users also have the privilege of on-line support, which, compared to the cost of the Microsoft equivalent is still a huge advantage for our readers.

For Windows Users

Open Source Office suites are here now and widely used as alternatives to MS Office products. Millions of computer users are considering the long term options, so now is the time to make up your mind, rather than being trapped by the continuous, high priced MS 'upgrade' syndrome all over again

Staged Transition

For Windows 98/SE, ME, 2000 and XP users, it's worth trying OpenOffice.org or Sun Microsystems StarOffice as the first step into Open Source products. Linux users already have these products packaged with Redhat 8.0 and Mandrake 9.0 operating systems, and are well practiced in their use. Do some homework by trying these new products, consider which way the professionals are heading – and save big money!

Summary

Power users will already know that a brand new computer (4), loaded with Redhat 8.0 and OpenOffice 1.02, with 128 MB of RAM, a 30 GB hard drive, powered by a Via EPIA 8000 motherboard all running from a 12-volt plug pack is selling for less than A$700!

This price is well below the cost of Microsoft XP Professional, and could end up being 'THE' Ham Shack Computer in the near future. How much did you say that you paid for your new computer AND software? Just following the tips from this series has saved readers thousands of dollars in the long term.

Radio Amateurs should, by definition, still be innovators and experimenters rather than 'black box' operators. However, there's nothing wrong with using 'black boxes' – it's what you connect to them that promotes innovation. Perhaps the computer has finally replaced the soldering iron in the modern Ham Shack, but these days the words 'Home Brew' also means experimentation with computer software that has overtaken constructing projects using individual electronic components. No more solder blobs stuck to the XYL's carpet! It will cost you nothing to try one of the Open Source Office Suites. You have absolutely nothing to lose – yet everything to gain. Go for it!

Ham Tip No. 25. For readers seeking links to all the software and tips mentioned in this series, just 'click' onto the Ham Shack Computers Web Site (1) and save time and money!

Ham Shack Computers, Part 26 – "Linux for Amateurs" next month looks broadly at the arguments for converting to Linux, and what's 'in it' for Radio Amateurs. If readers are still bewildered, just send the writer an E-mail and keep the 'Ham Spirit' alive.

Radio Amateurs should, by definition, still be innovators and experimenters rather than 'black box' operators.

References:

(1) Ham Shack Computers Web:
http://www2.tpg.com.au/users/vk6pg
(2) OpenOffice.org software at:
http://www.openoffice.org
(3) Sun Microsystems StarOffice at:
http://www.sun.com/software/star
(4) Linux and applications software at:
http://www.everythinglinux.com.au
(5) The Lure of Linux in: Australian Personal Computer (APC) Magazine. December 2002. pp 118-123.
(6) OpenOffice.org version 1.0 for Microsoft Windows 95-XP. Australian Personal Computer (APC) Magazine. Attached CD-ROM. October 2002.

73s de Alan, VK6PG

HF Predictions

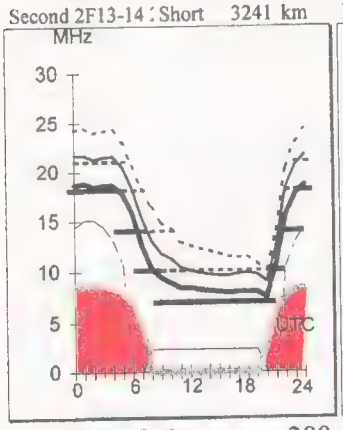
by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
These frequencies as identified in the legend are:-

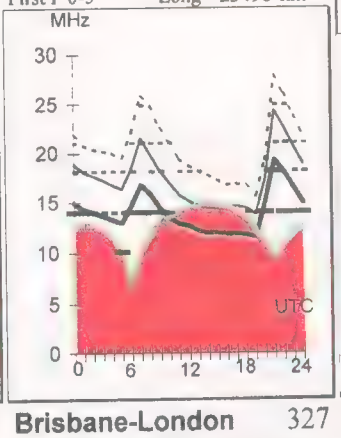
- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

Adelaide-Auckland 104
Second 2F13-14 : Short 3241 km

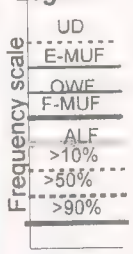


Brisbane-London 147
First F 0-5 Long 23498 km

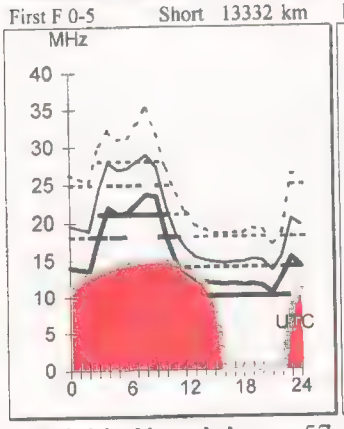


May 2003
T index: 71

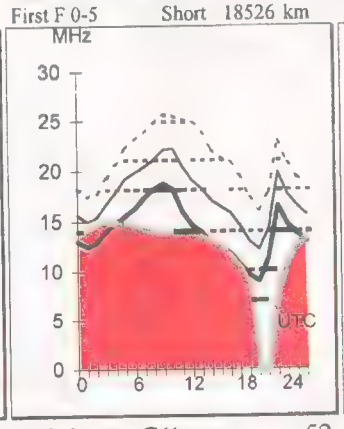
Legend



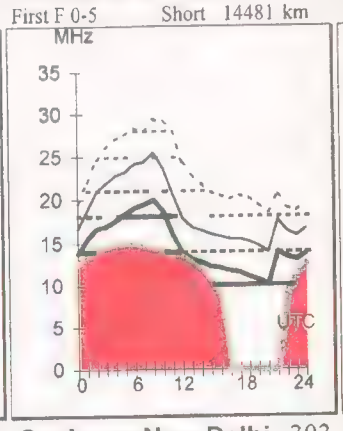
Adelaide-Cairo 288
First F 0-5 Short 13332 km



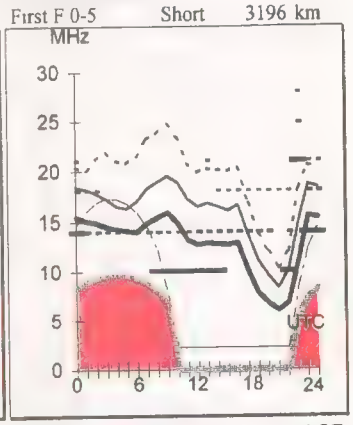
Brisbane-London 327
First F 0-5 Short 18526 km



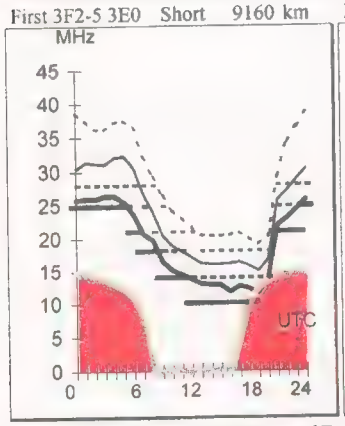
Canberra-Moscow 317
First F 0-5 Short 14481 km



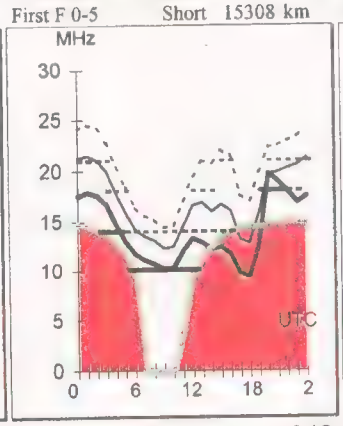
Darwin-Manila 340
First F 0-5 Short 3196 km



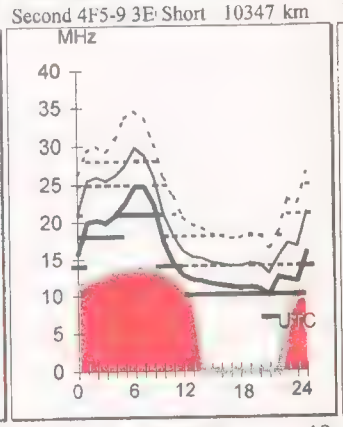
Adelaide-Honolulu 57
First 3F2-5 3E0 Short 9160 km



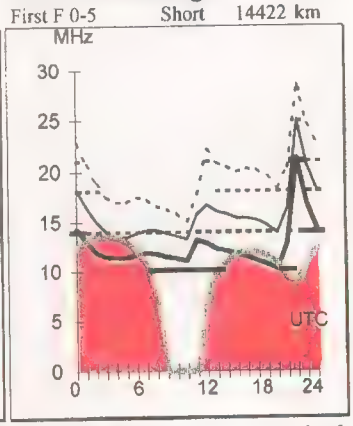
Brisbane-Ottawa 52
First F 0-5 Short 15308 km



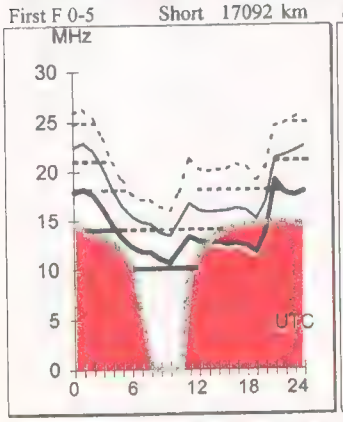
Canberra-New Delhi 303
Second 4F5-9 3E Short 10347 km



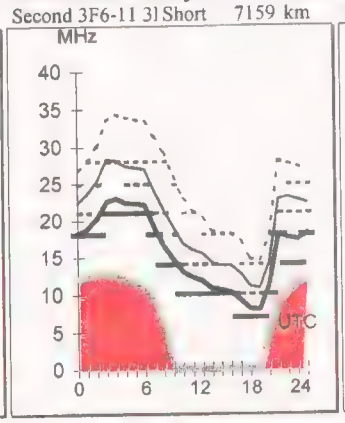
Darwin-Santiago 157
First F 0-5 Short 14422 km



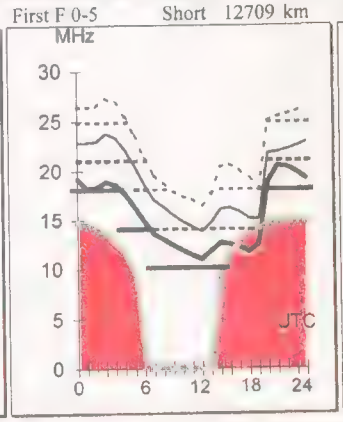
Adelaide-New York 67
First F 0-5 Short 17092 km



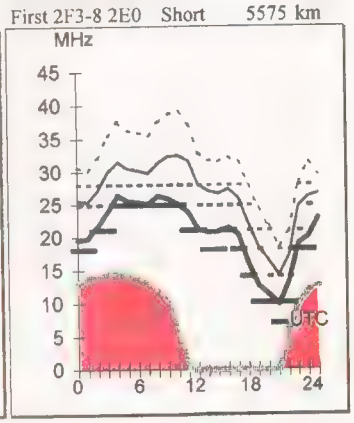
Brisbane-Tokyo 348
Second 3F6-11 3I Short 7159 km



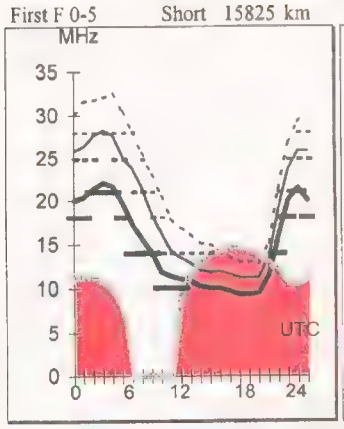
Canberra-Seattle 48
First F 0-5 Short 12709 km



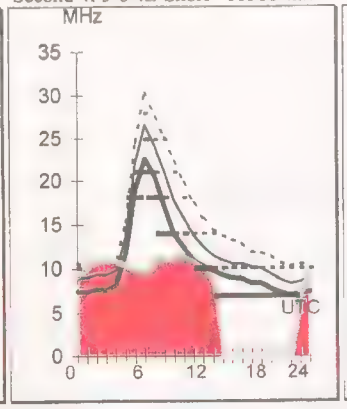
Darwin-Seoul 356
First 2F3-8 2E0 Short 5575 km



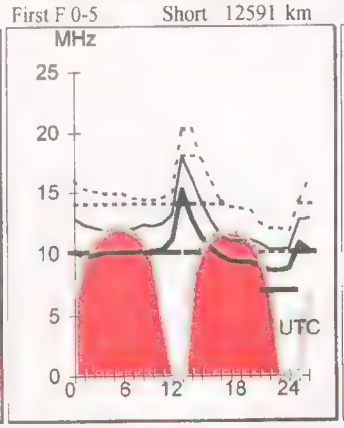
Hobart-Barbados 134
First F 0-5 Short 15825 km



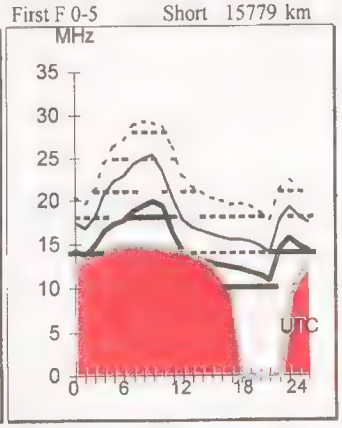
Melbourne-Capetown 222
Second 4F5-6 4E Short 10318 km



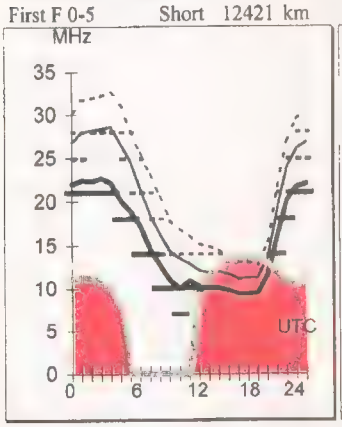
Perth-Buenos Aires 185
First F 0-5 Short 12591 km



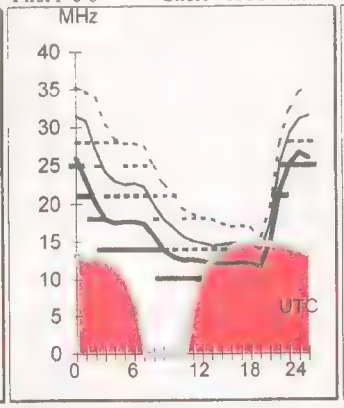
Sydney-Budapest 306
First F 0-5 Short 15779 km



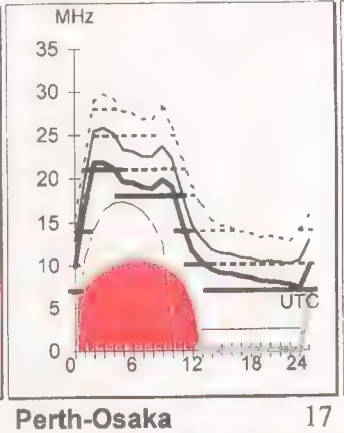
Hobart-Lima 133
First F 0-5 Short 12421 km



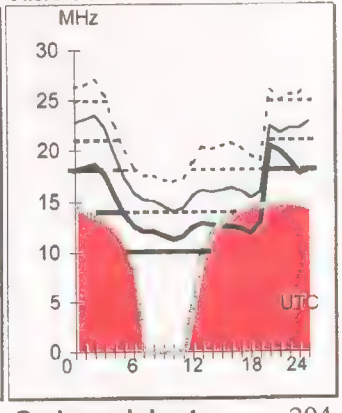
Melbourne-Miami 94
First F 0-5 Short 15584 km



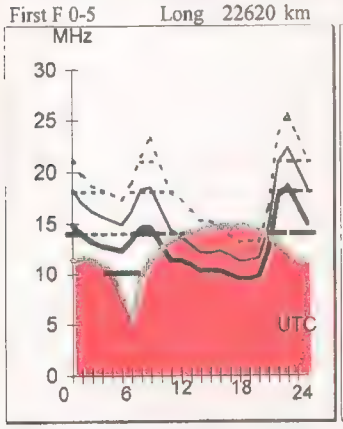
Perth-Columbo 312
Second 3F10-14 Short 5768 km



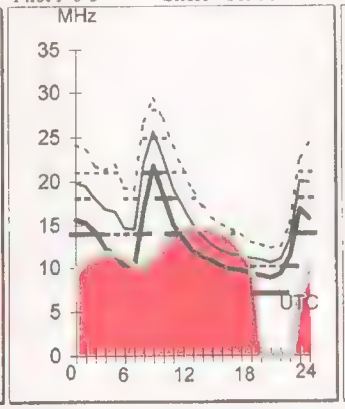
Sydney-Chicago 62
First F 0-5 Short 14876 km



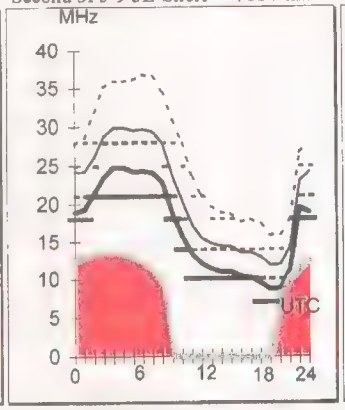
Hobart-London 123
First F 0-5 Long 22620 km



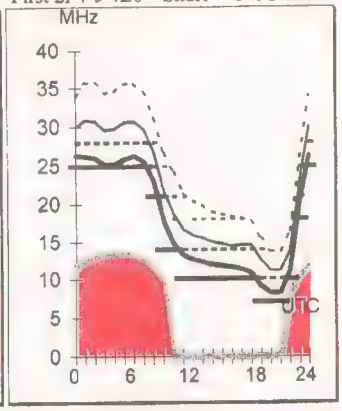
Melbourne-Senegal 219
First F 0-5 Short 16910 km



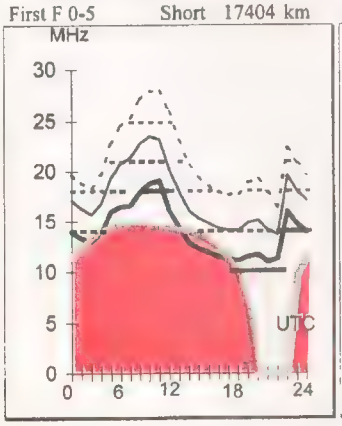
Perth-Osaka 17
Second 3F5-9 3E Short 7684 km



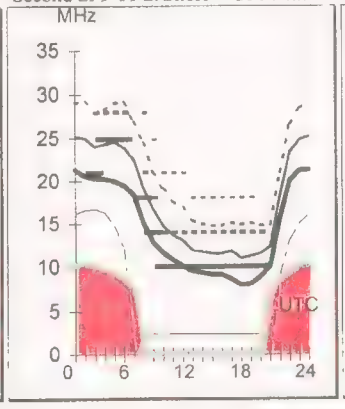
Sydney-Jakarta 294
First 2F4-5 4E0 Short 5498 km



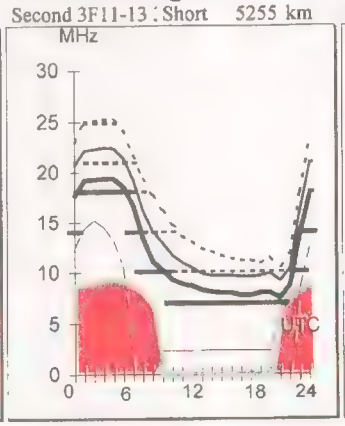
Hobart-London 303
First F 0-5 Short 17404 km



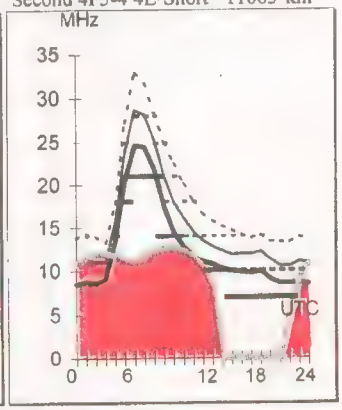
Melbourne-Suva 65
Second 2F9-11 2I Short 3914 km



Perth-Wellington 119
Second 3F11-13 Short 5255 km



Sydney-Pretoria 230
Second 4F3-4 4E Short 11063 km



How's DX?

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E-mail vk3wac@aol.com

AR not immune to change

The hobby of amateur radio is not immune to the changes taking place in today's society. For many years the global amateur population has been declining, admittedly more markedly in some countries than in others, but on the whole the trend is definitely downwards. In fact it was not so long ago that our own national society, the WIA, was seriously considering its future. A recent edition of the Italian '425 DX News' carried the following news item by Fred, K3ZO. "LCRA (Liga Colombiana de Radioaficionados) to be dissolved. My old friend HK3DDD has just informed me that postal rates in Colombia were doubled as of January 1, 2003 and it now costs the equivalent of US$2.00 to send a letter from Colombia to the USA", Fred, K3ZO goes on to say "It now costs HJ/HK hams the equivalent of 13 cents per QSL to send outgoing cards through the bureau, but anyway the bureau won't be available any longer because the Colombian IARU-member society LCRA is meeting this Saturday, 1st March, to dissolve itself, since with only 200 paid-up members and US$8000 of debt it feels it can no longer stay in business. Beto also says that Colombian hams have stopped calling CQ and running stations because they can't afford to handle the consequences economically. Colombian DXers are simply searching and pouncing these days, looking for new countries for themselves". Fortunately, VE3EXY reported after the meeting that the existing members decided not to wind up the LCRA affairs and the league will continue to survive for a while yet.

I admit that Australia is not Colombia, and certainly the WIA is not quite in the position the LCRA finds itself in, but the WIA still has a membership problem. Without a strong national membership the various WIA services we all so often take for granted may well not be able to be funded or provided for in the future. Everyone, members and non-members alike, whether you only 'tinker' in amateur radio or only occasionally work a bit of rare or long-haul DX profit from the services of the WIA. Everyone will sorely miss these services and facilities if, by unfortunate chance, the WIA ever finds itself in a similar situation as the LCRA.

Talking about 'tinkering' in amateur radio, another report from 425 DX News by Sylwester Jarkiewicz, SP2FAB, reveals that Poland has authorised amateurs to use the LF spectrum from 135.7 – 137.8 kHz on a secondary basis. Output power is limited to 1 watt EIRP on CW. I wonder whether it is time for VK amateurs to begin petitioning for access to this band.

The DX

3D2, FIJI. Andre, GM3VLB is heading to Fiji on holiday. He says he will be on air as 3D2LB from Beachcomber Island (OC-121), Fiji from the 26th until the 30th of May. QSL direct only to GM3VLB. [TNX GM3VLB and 425 DX News]

3X, GUINEA. Leo, UT1WL is currently stationed in Conakry (Guinea) and has been issued with the callsign 3XY1L. He will be using a TS50 on 20 and 15 metre using simple dipoles until he can arrange for alternative antennas for the other bands. Listen for Leo after 1800 UTC especially during the weekends. QSL via UY5XE either direct to George Chlijanc, P.O. Box 19, 79000 Lviv, Ukraine or via the bureau. [TNX UR5WCW and 425 DX News]

9N, NEPAL. Dov, 4Z4DX is planning to be active as 9N7DX from the 21st of April until the 15th of May. Activity will be on 160 - 6 metre using CW and digital modes. QSL via 4Z4DX. [TNX 4Z4DX and 425 DX News]

9N, NEPAL. Hugo, LA5YJ/9N7YJ has recently returned to Kathmandu, Nepal on a U.N. assignment. He has equipped himself with a modern transceiver and trapped dipoles for the 160, 80, 40, 30, 17 and 12 metre bands. An amplifier is also in his sights. Hugo says that he does not operate using digital modes. QSL direct only to Bjorn Hugo Ark LA5YJ, Rute 504 - Paulsrud, NO-2840 Reinsvoll, Norway. [TNX LA6FJA and 425 DX News]

BU2, TAIWAN. Mark Kawasaki, JJ1TBB has been authorised to operate as BU2/JJ1TBB from Taipei. Mark is expecting to be staying in Taiwan for at least the next three years. QSL via JL1ANP. [TNX JJ1TBB and OPDX]

C9, MOZAMBIQUE. Max, IZ4DPV () and Filippo, IK4ZHH () will be on air from Mozambique from the 20th of April until the 4th of May. They have been issued with the calls C93CM and C93FF respectively. The pair are planning to be on 80 – 10 metre using SSB and CW with some RTTY and 6 m work a possibility. Equipment will be 100 watt and TH7 and wire verticals. They also intend to participate in the ARI DX contest over the 3rd and 4th of May so if you want C9 have a listen over the weekend. QSL via their respective home calls CBA or via bureau. Note, E-mail or eQSL's will not be accepted. [TNX IZ4DPV and 425 DX News]

D2, ANGOLA. Joao, CT1BFL says he is planning on a long trip to Angola and expects to be on air until Feb 2004 signing as D2U. To date he has not been able to get on air but when he does his activity will be mainly on 160 - 10 meter running CW and SSB. QSL via CT1BFL. [TNX CT1BFL and OPDX]

FO, FRENCH POLYNESIA. Jean-Baptiste, F8DQL is planning to be active as FO/F8DQL from Tahiti (OC-046, DIFO FO-002) over the period of the 3rd until the 25th of May. Check +/- 28030, 21030 and 14030 kHz. He is also hoping to get in a trip to Moorea (OC-046, DIFO FO-010) during the same time frame. QSL via the bureau or to Jean-Baptiste Jacquemard, 241 Boulevard Voltaire, F-75011 Paris, France or via the REF bureau. [TNX F5NQL and 425 DX News]

HB, SWITZERLAND. The Amateur Radio Club of Vaud Canton, Switzerland

() has been granted permission by the Swiss authorities to use the special call HE2MM from the 1st of April until the 31st of December. Further details of the club and its activities can be found at http://www.hb9mm.com All QSOs will be confirmed automatically via the bureau. [TNX HB9DUC and 425 DX News]

JA, JAPAN. Taka, JR3TVH/6 says he will be active again from Miyako Island (AS-079). Activity will begin at approx. 0900 on the 1st of May until 1000 on the 5th. Taka is planning for activity on 6, 10, 12, 17 and 20 metre using SSB and CW. QSL via JR3TVH either direct CBA or via the bureau. [TNX JI6KVR and 425 DX News]

JA, Japan. Toshi, JM1PXG/6 says he has had to change his operating plans due to a change in the ferry schedule. He will be operating from Tokara Kuchino-shima (AS-049) on the 40, 20, 17, 15, 12 and 10 metre bands using CW only beginning on the 3rd of May until around 0000 UTC on the 5th. QSL via home call either direct or via the bureau . [TNX JI6KVR]

KH3, JOHNSTON ISLAND. John, KH3/KT6E is on a short assignment to Johnston Island and will be there until sometime mid-year. He operates as much as his free time allows and runs 100 watt and a long wire. QSL via the address at www.qrz.com [TNX KH3/KT6E and The Daily DX]

TU, IVORY COAST. David, F5THR will be visiting the Ivory6 Coast from the 23rd March until the 1st of July. While there he will be using the callsign TU5CD. QSL via F8BON either direct or via the bureau. [TNX La Gazette du DX and 425 DX News]

W, USA. The Fall River Amateur Radio Club is planning a trip to Martha's Vineyard (NA-046) and will be on air on all HF bands using the callsign W1ACT.Activity will take place over the 2nd to the 4th of May. QSL via N1JOY, Roland Daignault, 19 Davis Road, Westport, MA 02790, USA. [TNX RSGB and 425 DX News]

V7, MARSHALL ISLANDS. Neil, WD8CRT is currently active as WD8CRT/V73 from Kwajalein (OC-028) in the Marshall Islands. He says he will be there for his foreseeable future and has applied for the callsign V73NS. Neil is often on air after 1200 UTC, particularly between 00.00-03.00 UTC, try listening around 14029, 10116, 21004 and 28021 kHz. QSL via address on www.qrz.com [TNX WD8CRT]

YB, INDONESIA. Stan Matejicek, OK1JR will be living in the Czech embassy for the next few months. While there he will be on air as YB0AJR operating on 160 – 6 metre. He also has plans to travel to some of the Indonesian islands when and if he has the time. Stan has a website at www.ok1jr.com/ wher you can find more details. QSL via OK1JN (Stan's Father). [TNX OK1JR and 425 DX News]

Special Events

The 5th High Speed Telegraphy World Championship is being held in Minsk, Belarus over the 4th until the 8th of May. The event will be marked by the **special event station EW5HST** which is currently being aired by the event organisers. A website at http://hst2003.osto.by/ will reveal more details (although I'm not sure if the site will be in English). The station is often heard on 14030 kHz around 1800 UTC and later. QSL via EU1SA. [TNX EU1SA and 425 DX News]

Sam, VE3XAP, says that the Canadian authorities have allowed all VE, VO, VA and VY radio amateurs to use special event prefixes to celebrate the National Library of Canada's 50th anniversary over the period of the 24th until the 27th of May. **VE's can use CK, VO's can use CY, VA's can use CJ and VY's can use CZ.** [TNX VE3XAP and OPDX]

Club station PY3ARD has been allowed to operate **the special callsign ZW90S** during 2003 to celebrate the 90th anniversary of the Gerge Black Scout Group. This is the oldest Scout Group in Brazil and has operated uninterrupted since 1913. Plans are for the special callsign to be on air for the first time during the CQ WW WPX SSB Contest, but organisers say they expect to be quite active during the rest of the year as well. QSL both PY3ARD and ZW90S via the bureau or direct to Associacao dos Radioamadores da SOGIPA, Rua Barao do Cotegipe 400, 90540-020 Porto Alegre - RS, Brazil. [TNX PY3DX and 425 DX News]

The **special event callsign IR3IDO** will be on air from the 24th of May until the 15th of June to celebrate the 75th anniversary of the expedition to the North Pole led by General Nobile. History was made when the expedition went awry when the airship 'Italia' crashed and the survivors were rescued after radio played a pivotal role in the search and rescue efforts. QSL to IK3OYY via the bureau or direct to Fabrizio Bottaro, Via A. Manzoni 4, 35041 Battaglia Terme - PD, Italy. [TNX IK3OYY and 425 DX News]

Victor, RV3YR, says that he and a number of other operators from the Fifth Ocean Flight Amateur Radio Club will operate the **special event station RP3YGA** from Brjansk region over the period of the 5th until the 12th of May. The station will also take part in the CQ-M International DX Contest too. More information on the club can be found on their website at http://www.qsl.net/5ocean QSL direct only to RV3YR. [TNX RV3YR and 425 DX News]

The **special event callsign IU7FM** will be on air from the 11th until the 18th of May to celebrate the 4th Friendship Meeting. The meeting is being held just outside Porto Cesaro, Italy. For further details visit http://www.dreamingsea.it [TNX I7YKN, IK7JWX and 425 DX News]

DXpeditions

PY, BRAZIL. An international group of amateurs consisting of CT1AHU, PY8EA, PT7BI, PT2GTI, PT2HF are planning a trip to Mexiana Island (SA-042). The group will be on the island from the 21st until the 25th of May and plan to operate on the 40, 20, 15 and 10 metre bands using SSB. No QSL route as yet. [TNX CT1END, CT1AHU and 425 DX News]

FO, MARQUESAS ISLANDS. A team of Italian amateurs will be active from the Marquesas Islands (OC-027) beginning on the 25th of April until the 9th of May. The team will comprise I2MOV, I2YSB, IK1AOD, IK1PMR, IK2DIA, IK2GNW and IK2WXV and plans are to run three stations operating

on all HF bands with a separate station on 6 metres. A beacon will be operating for five minutes on 50105 kHz every thirty minutes (on the hour and thirty minutes past the hour). The callsign will be TX4PG. Check their website for further details at http://digilander.libero.it/i2ysb/ QSL via I2YSB. [TNX I2YSB and 425 DX News]

Round up

I had a query from a VK4 regarding the QSL route for the recent VP6DIA Ducie Island Dxpedition. After a bit of searching on the internet I can confirm that the only authorised route is via JR2KDN, Yuichi Yoshida, 4F Kato Building, 529 Rokugaike, Kita-Ku, Nagoya 462-0002, Japan.

Philippe Schmitt (ex PU2DXS and PT2PS) has changed his callsign to PT2FM. The inspiring thing about Philippe is that he is 14 years old and first gained his licence at the age of eleven. His new callsign indicates that he now qualifies for all full licence privileges. [TNX PT2FM and 425 DX News]

Some not so good news regarding Peter, VY0PW who is currently on assignment in Niger. Peter says that he has been badgering the Niger authorities to issue him with a licence for his eastern Niger QTH but has recently been informed that a licence will not be issued for amateur operation from this part of the country. Apparently the authorities have 'serious concerns relating to internal security in various parts of Niger and deem an HF radio in private hands is too much of a risk'. New licences are only being issued for amateur operations from the capital of Niamey and its immediate surrounds Unfortunately this does not include Peters QTH. [TNX DK8MZ and 425 DX News]

Neil, WD8CRT is on Kwajalein in the Marshall Islands and expects to be there for quite some time. He has applied for the callsign V73NS but at this date is still awaiting confirmation. Bob, WB8B hints that if you here Neil on air working split then it is a good sign the he will be operating for an extended period of time. However, if you hear him operating on a spot frequency then this probably indicates that he is only on a short visit to the shack. Bob also says that there are also antennas for 80 and 160 metre that Neil has not had a chance to set up yet. QSL to WD8CRT/V73, Box 8341, APO, AP 96557 (Or via the V73 Bureau).

As mentioned earlier Leo, UT1WL is currently working in Conakry, Guinea and has recently received the licence to operate as 3XY1L during 2003. Leo is not on a Dxpedition and is using some basic and simple equipment, a TS50s (on battery power due to the frequent interruptions to the mains electricity supply) and is presently limited to operations on 20 and 15 metre due those being the only bands he has antennas for. He is planning on erecting antennas for 40 metre soon. He is most active after 1800 UTC and during the weekends. At some time during his stay he is hoping to visit both of the IOTA groups of islands, the Loos Islands (AF-051) and the as yet unnumbered islands including

Digital DX Modes

A new mode called JT6M has been added to WSJT. This mode is optimised for 6 metre meteor scatter and is positioned between FSK441 and JT44 as shown in the following table:

Mode	Speed Characters / Sec	Sensitivity CF to SSB Passband
FSK441	141	0 dB
JT6M	14	-14 dB
JT441	-22 dB or up to -28 dB with averaging	

JT6M gives its full advantage over FSK441 on 6 metre meteor scatter contacts at distances in the range of 1500 km to 2000 km. At distances of 700 km and less the shorter pings give no advantage over FSK441. Peter VK3KAI and Mike VK2FLR have shown that the speed of this mode has advantages for Aircraft Enhancement contacts on 2 metre on paths too poor for SSB. Joe Taylor, K1JT, advises that his next project is a more efficient birdie killer for WSJT.

A number of stations have been experimenting with JT44 on troppo scatter on 2 metre. Ron, VK3AFW has been working Guy, VK2KU (Melbourne to the Blue Mountains) with signals averaging around -17 dB. Stations working regularly to Rex VK7MO in Hobart are Des VK3CY (788 km and typically -21 dB), Ron VK3AFW (596 km, -12 dB), Ian VK3AXH (660 km -20 dB), VK3AUU (545 km -16 dB) and Warren VK3BWT (621 km - 13 dB). The focus frequency for JT44 is 144.225 and there is activity most weekday mornings from 0700 to 0830 Vic / NSW time. Southerly stations TX in the first period.

For terrestrial JT44 contacts the procedure is to exchange a report that represents the signal strength in -dB, eg 1616 means a signal of -16 dB. For example send: VK3AXH VK3BWT 1616 RRRR.

The following codes are also used for terrestrial JT44 contacts:

NNNN nil signal copied
MMMM copied meteor pings only
GGGG copied your grid square
PPPPP partial copy of a signal
RRRR copied both call signs and a signal report in – dB

FSK441 activity sessions are held each Saturday and Sunday morning from 0700 to 0800 local NSW / VIC time on 144.230. Contacts are generally possible in the range 800 to 1800 km. Stations operating over the past month include Waldis VK1WJ, Ian VK2EI, Adrian VK2FZ, Dave VK2AWD, Neil VK2AKR, Mike VK2FLR, Wayne VK2JKK, Des VK3CY, Gavin VK3HY, Charlie VK3FMD, Peter VK3KAI, Warren VK3BWT, Rod VK4KZR, Glenn VK4TZL, John VK3FGY and Rex VK7MO.

Guy VK2KU and Mike VK2FLR have been working new countries and grid squares using JT44 on two metres EME. Mike's signal has been seen in the UK by GW4DGU using a single 7 metre long yagi.

As you read this Rex VK7MO, will be portable at Lord Howe Island activating VK9 on 2 m, 70 cm and 23 cm from the 3rd to 10th of May. FSK441 contacts should be possible from central Queensland to Tasmania and as far west as Adelaide. Troppo scatter contacts on JT44 may be possible into the East Coast of NSW on 2 m and 70 cm with Aircraft Enhancement being a possibility on 23 cm.

For information on the Digital DX modes and operating procedures please look at the VK2 VHF DX site http://www.vhfdx.oz-hams.org/ then click on "Digital Modes".

Rex Moncur VK7MO

75th Aniversary of Trans-Pacific flight

On May 31, 2003, (June 1 your date) the Western Aerospace Museum at Oakland Airport, Oakland, CA, USA, will be celebrating the 75th anniversary of the 1st trans-Pacific flight. The event is sanctioned by the Centennial of Flight Committee. Speakers at the event will include the sons of the Pilot and Navigator and the Australian Consul to San Francisco.

For historical background, Charles Kingsford Smith and crew lifted off from our airport May 31, 1928, to start their epic eight-day flight to Brisbane, Australia. The Southern Cross first landed at Wheeler Field in Honolulu, then Barking Sands Beach on Kauai.

From there it flew nonstop to Suva, Fiji where it landed on the field at Albert Park. Unable to take off from there with a full load of fuel, they flew to Naselai Beach, filled up and took off on their final leg. The destination was Eagle Farm Airdrome outside of Brisbane. Onboard that flight was an American radio operator, James Warner, who kept the listening world informed of the plane's progress by HF transmissions. Huge crowds were on hand to greet them and give them a hero's welcome.

As part of the celebration the East Bay Amateur Radio Club has volunteered to set up HF voice and Pactor communications network at the Museum between activities and interested persons, especially in the places where the plane landed.

We would be very pleased indeed if ham radio operators in Australia and Fiji would participate in our event.

While a "Third-party" communications treaty is already in place between the US and Australia, none exists with Fiji. However, I have been in correspondance with the Deputy Secretary of the Ministry of Communications in Fiji, Minister Josua Turaganivalu, to request a temporary third-party agreement. Our hope is that he may provide a waiver to allow amateur operators for the day of the event to carry out such communications.

A similar waiver will be required from the US State Department and FCC for which, I have been told, a form exists.

We envision participants would be able to talk to each other about their memories of, or interest in the flight. It would be an added benefit if participants were able to talk from home by phone patch. This could be especially important if events do not correspond to the time of our event.

The radio operators here will pass on Pactor messages of well-wishers.

Interested participants will talk to each other over radios under operator control who will be able to direct especially interesting communications into the auditorium over the PA system for all to hear (and respond).

The radio station here will continue to be active throughout the event, from noon until 10 PM PDST, Saturday, May 31 (I think that's 5 AM-3 PM, Sunday, June 1, your time and date).

We believe this cooperative effort will increase the experience for all involved and should lead to a much better feeling for that monumental flight. We expect this exchange to foster warm feelings between all participants and serve to bring this historic event alive, again.

I have heard concurrent events are being planned in Australia but I don't have any of the specifics as to where and by whom. Nor do I know if any activities are being planned in Fiji for the day.

Pactor communications were received through AsiaNet during the 60th Anniversary of the flight in 1988 from Australian dignitaries, aviation museums, and air club leaders who joined others to send their best wishes for the occasion. We hope they will do the same this year.

If you can help get the word out or have any recommendations on whom we might contact, it would be greatly appreciated.

Tom Hieronymus N6RQQ
Trustee, Western Aerospace Museum

How's DX? continued

the Tristao Islands. QSL via UY5XE either direct to George Chlijanc, P.O. Box 19, 79000 Lviv, Ukraine or via the bureau. [TNX UR5WCW and 425 DX News]

Obi, JA0WJN is based at the Japanese Dome Fuji Station in Antarctica and is signing 8J1RF. The base was established in February 1995 and its location is 77.19S-39.42E which puts it approximately 1000 km from the coast and is roughly 3800 m above sea level (should make for a long slide downhill!). Obi expects to be at the base until at least January next year. His equipment and antennas permit him to operate on all HF bands 30 – 10 metre using SSB, CW, RTTY and SSTV. He also hopes to get some time on the satellites especially AO40. Obi says he will most likely be on air around the following times; 09.30 - 10.00 UTC, 12.30 - 13.00 UTC, 17.00 - 20.00 UTC on week days, 13.00 - 20.00 UTC on Saturdays and 07.00 - 20.00Z on Sundays. All QSOs will be confirmed automatically via the bureau when Obi returns to Japan sometime after May 2004. [TNX 8J1RF and 425 DX News]

Mark Kawasaki, JJ1TBB, is extremely happy with his new callsign from the Taiwanese authorities. He has been granted permission to operate as BU2/JJ1TBB and says that the 'BU' prefix is very new. Mark will be based in Taiwan for the next 3 or 4 years and plans to be active on 40 – 10 metre using CW and SSB. He has already been spotted on air around 21262 kHz at 0200 UTC. Apparently Mark is well known in the region, with past activity from Singapore as 9V1AN during 1995-96, Christmas Island as VK9XB in 1996 and Vietnam as XV2A in 1991 among others. QSL via JL1ANP. [TNX JJ1TBB and OPDX]

Sources

This month, as always, we thank the various individuals and organisations for the information and news contained in this edition of DX Notes. This month our thanks go to; 8J1RF, UR5WCW, WD8CRT, DK8MZ, PT2FM, I2YSB, CT1END, CT1AHU, I7YKN, IK7JWX, RV3YR, IK3OYY, PY3DX, EU1SA, VE3XAP, OK1JR, RSGB, KH3/KT6E, JI6KVR, JI6KVR, HB9DUC, F5NQL, CT1BFL, IZ4DPV, 4Z4DX, LA6FJA, UR5WCW, GM3VLB, SP2FAB, HK3DDD, K3ZO, VE3EXY, 425 DX News, OPDX, RSGB, The Daily DX and La Gazette du DX.

Hamads

FOR SALE NSW

• **Power Supply.** Industrial switch-mode 10-18 volts up to 43 amps! $75 plus circuit instructions. Post anywhere in Oz (5kg). Bob VK2CAN Phone 02 9416 3727

• **Tilt over 50 ft wind up tower**, on ground ready for transport $350. VK2IRP QTHR Phone 02 9802 6066

• **Kenwood TL-922 HF LINEAR AMPLIFIER.** A matching pair of AMPEREX 3-500 ZG graphite anode glass tubes installed with very little operating time. I have owned amplifier since new. Excellent condition. Supplied with Kenwood Owner's & Service Manuals, & interconnect cables. Amplifier will tune WARC frequencies. Any inspection welcome. Genuine reason for sale. $1650-00 James VK2JO GPO Box 5076, Sydney. 2001. NSW. Australia. Email: jamesgoodger@hotmail.com, Fax 02 9838 0644.

• **Shack clearance**: The underlisted items are available at prices quoted or near offer subject to BEST OFFER by 31st May 2003. (1) **KENWOOD TS-440S** with AAT and Mic MC-60 #7090801 $1500. (2) **KENWOOD Power Supply for 440S** $125. (3) **YAESU Antenna Tuner FC-301** #8H070749 $250. (4) **FUJIDEN LPF 1kW FD-30M** (nsn) $50. (5) **YAESU Linear Amp FL-2100B** #190432 $450. (6) **AZDEN 2 m - FM PC5-3000** #81015 $450. (7) **ALINCO VHF/UHF Mobile DR-605T** #T002525 $500. (8) **KENWOOD TM-221A 2M FM Mobile** #9031810 $200. (9) **TAIT T-196 2 m Base** with P/S #207639 $200. (10) **DAIWA 1P4T Coax SO-239 Switch** (nsn) $50. (11) **MARCONI VTVM TF-2604** 240 Vac 1500MHz #200930/45 $150. (12) **HP-410C VTVM** 240 Vac 1500MHz #0982A14561 $100. (13) **UNIDEN 16ch Scanner** (nsn) $50. (14) **GRUNDIG GDO TR-300 0.4 - 300MHz** #64/101 $75 (15) **A & R PS-141** Batt. elim 4.5/12V 500mA $25. Contact via email to: tonymul@pip.com.au or Phone 02 9791 0366 Tony VH2ACV.

• **Deceased estate:** From the estate of John Thornthwaite, VK2ATO: **MFJ-949E HF ATU** - Versa Tuner, as new, packing, man. $150. **YAESU FC-707 HF ATU** EC, copy man $150. **YAESU FT-707 HF** 100 W, mic, copy man, GWO $500. **YAESU FT-270R/RH** 2 m FM box, mic, man, mob bkt, GWO $200. **ICOM IC-211** 2 m ALL MODE mic, man GWO $300. **ICOM IC-2A 2 m** HH chgr, bat, man, a little battered but GWO $100. **ICOM IC-45A 70 cm FM** mic, mob bkt, man, GWO $200. **KEN KP-202** Vintage 2 m HH - 6 xtal chans, no man, needs AA nicads, still works! Collectors item! $50 **KENWOOD R-5000** classic comms rcvr, copy man, GWO $500. **SWAN SW-350 HF** 200 W, man, heavy duty HB pwr supply, no remote VFO, GWO $100. **SHURE 444** - classic magnetic desk mic., PTT bar, good order $50. **RESLO - Desk ribbon mic.** - OK $40. **BC-221** - 1940s military freq. meter - book not calibrated, GWO $50. **PHILIPS FM-92 UHF** - unmod, untested, remote head but no mic. $50. **MARCONI TF-995** AM/FM sig gen - 13.5 to 220 MHz - battered, large, heavy, OK $50. **HEATHKIT HA-202A** 2 m high power lin amp, not boxed, working $25. **CONNOR T215 BICC** test oscilloscope - special pulse tester for lines. EC $50. **TAIT T-196** UHF mob tcvr, no mic, no man, unmod, untested $20. **HEATHKIT IM-13 VTVM** no man, no probes, OK $10. **ALINCO ELH-230D** – 2 m lin amp (HH to 30 W) no man GWO $25. **DIGITOR D-2510** – 2 m lin amp (HH to 30 W) no man GWO $20. **MIDLAND 70-340B** 2 m FM – 25 W, 80 chans, mic, lead, no man, GWO $100. **PHILIPS 2 m FM** single channel, neat unit, mic, xtals for 146.7, GWO $25. All prices ONO plus pack and post. Transmitting gear to licensed amateurs only. Serial numbers available. Enquiries to Stan Bourke, VK2EL, QTHR (Ulladulla). Phone 02 4455 5825 or e-mail sbourke@shoal.net.au

• **Tower, gal steel, triangular** 570 mm per side, 8 sections each 3 m long very strong, ex Telstra $500. John VK2ZHM QTHR Phone 02 9417 5338 mitchell@zeta.org.au

WANTED NSW

• **HF multi band vertical antenna**, also Discone or wide band rx-tx antenna for scanner use. Either base or mobile plus 6 m, 2 m, 70 cm mobile antennas. Jim VK7GO/2 Mobile 0403 070 671

• **Tone squelch unit FTS-6** for Yaesu HT FT-209R. Email VK2IGS igray@nor.com.au

• **Phillips FM-828/825 W1 Band**. Any quantity. Contact Sky, vk2tsl@sarc.org.au, de Sky VK2TSL QTHR.

FOR SALE VIC

• **Westinghouse 8-transistor vintage portable B/C receiver** in original leather case, also professional chimney flue cleaning kit. Both in good order. $70 the lot. VK3GMM Phone 03 5985 2671

• **Deceased estate: Kenwood** communications receiver R-5000 and manual, S/N 80500034. Mint cond. $650 ono. Ted VK3ALT QTHR, Phone 03 5941 1248.

• **Deceased estate: Kenwood transceiver TS-520D** $300, c/w ext speaker $50, ext VFO $70, antenna unit $70. **Station monitor** $100. **Kenwood transceiver SSB TS 120S** Trio c/w ext VFO $400. **Kenwood transceiver TS-700S** $250. **Kenwood transceiver HF TS-50** $800. **Kenwood auto antenna tuner AT-50** $350. **Antenna TH3-JNR** 3 El Tri Band Beam (new) $500. Serial nos and manuals available for all items. Contact: Phone 03 5821 6314.

• **YAESU FT-767GX c/w 6 m, 2 m & 70 cm modules**, in pristine condition. S/N 9D/250119. $2200 or nearest offer. VK3BCQ QTHR. Phone 03 9309 5613.

• **Metal mast: 10 metre,** guyed (galv. iron & aluminium, with timber top). Also G5RV & other antennas, etc. $55 or offer. David VK3DNG QTHR Phone 03 9859 4698. Email: darodda@jeack.com.au

• **Kenwood TS-690S HF and 6 metre**. Excellent condition $1100. Contact VK3DTO Andy, Phone 03 5382 1759 or vk3dto@amsat.org

• **Antenna tuner MFJ-969**, H/F + 6, new and unused, $475. S Algar Phone 03 5941 1680

WANTED VIC

• I am refurbishing a **Butternut HF6V 6 band HF vertical**. I require a copy of the **assembly instructions** to get it going. Happy to reimburse copy and mail charges etc. Ian VK3AYK Phone 03 9580 6627 Email: ikeenan@bigpond.com.au

• **Icom 448A. 70cm FM monoband radio.** Contact Warren VK3XSW, email warren.stirling@blackboxoz.com.au

• **For Wireless Set No 11** - A low power PSU in any condition - complete or empty box would be fine. Empty case would be fine too. Also need two of the female three pin plugs to suit the PSU. These plugs have a triangular pattern to suit two thick pins and one thin. For Wireless Set No 62 - one of the aluminium handles/bracket for the front panel. Clem VK3CYD Phone 03 5126 2064, clem@dcsi.net.au

• I would like to get **a Commodore Amiga 1200**. My preference is one with the motherboard still in the original Commodore keyboard case, but after market tower could be useful. I will also need manuals. Alan

About hamads....

- Hamads may be submitted by ***email*** or on the ***form on the reverse of your current Amateur Radio address flysheet.*** Please print carefully, especially where case or numerals are critical.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at $25.00 for four lines (twenty words), plus $2.25 per line (or part thereof), with a minimum charge of $25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or printed clearly, and be received by the deadlines shown on page 1 of each issue of Amateur Radio, at:

Email: *newsletters@ozemail.com.au* **Fax:** *03 9756 7031*

Postal: *Newsletters Unlimited, PO Box 431, Monbulk Vic 3793*

"Mickey Mouse" language

With respect to the article by Bob Slutzkin, VK3XK, in the April edition I wonder whether this is not one of the problems with the Institute and its inability to attract new members.

He says "why not use whatever phonetics you like"!! That would certainly be a very "Mickey Mouse" way of doing things - everyone just doing whatever they like. It is a bit like his way of quoting the call sign of VK3BFG.

I personally find the language used on air today rather distasteful. Admittedly, I am a bit long in the tooth having been a ham since 1970 but in those days the code was definitely no swearing, no politics and no religion.

Whilst I know that swearing is fairly common these days, streetwise, it does not have to be so on air, does it? With all due respect to CBers, that used to be the criticism of a lot of CB operators in the early days, their foul language, and it put a lot of people off ever being involved. I suggest that it does nothing to encourage new members to ham radio today.

Graham Kinge - Victor Kilo Three X-ray Kilo (VK3XK)

CB a start, at least!

In reference to a letter-to-the-editor headed "The Dick Smith way?" AR, Vol. 71 No 3, I can sympathise with J Robertson's apparent despair at the loss of the lower frequencies of the then 11-10 metre amateur band to the CB radio allocation, but I would ask JR to consider what actually occurred as a direct consequence of Dick Smith's efforts.

CB became the nursery ground to many future AR operators and radio/electronics professionals. I can testify to this through personal experience! As a way of introducing a large number of people to radio as a hobby and of broadening AR's exposure to the general community, it was perhaps singularly successful in its scope.

Dick Smith should be applauded for being instrumental in this.

Tim Parrey VK2TA

The last word

I thought Bob Slutzkin VK3SK (OTU April 2003) said all that needs to be said, and destroyed his own argument at the same time, when he wrote, "Of course the phrase must be familiar to the person being called".

Don Jackson VK3DBB

HAMADS continued

VK3JAJ, Phone 03 9817 2057, P.O. Box 442, Deepdene, Vic 3103. email: vk3jaj@bigpond.com

FOR SALE SA

• **Kenwood TS-430S HF tcvr** with all optional filters fitted, instruction manual and service manuals. All in excellent condition, $750 ono. John VK5KBE QTHR, Phone 08 8250 7259 or mobile 0412 000 076

• **1 x Microwave Developments 12 slot**, horizontally polarised, omni directional slotted waveguide antenna tuned to 1283MHz. The antenna is brand new, powder coated white, 185cm long, a gain of 10.5dbi and will handle 75 watt RMS. Perfect for an ATV repeater or beacon. Will sell at cost $300 firm. Please call Steve VK5SFA 0418 657 658

• **Hy-gain TH-3 Jnr Triband Ant**, good traps/caps, $50 buyer collect. 477 MHz 12db gain base vertical with 59ft RG-213, n conn./PI259. offers. Ray VK5AVR Phone 08 8762 2034 or e/m ramar2@dodo.com.au

WANTED SA

• **7 to 20 A H/D 13.8v PSU** Suit new 2 m rptr in SA, must be OK, continuous use. Ray VK5AVR Phone 08 8762 2034 or e/m ramar2@dodo.com.au

FOR SALE WA

• **COLLINS GEAR.75S-3 AND 32S-1,** with VK made 240/110v step-down transformer, plus manuals, and has Astatic 10d mic on "G" stand to go with the Tx and Rx. Also, **516E-1 power supply for KWM-1**. This is the solid state P/S operating from 12v for the KWM-1. All gear in good condition and operational. **SOUTH MIDLANDS COMMS Ltd (SMC) monitorscope**, almost matches Collins gear, has operating trace but needs some repair as focus not right!. **HEATHKIT SB-200 Amplifier** with 2 x 572B Centron spares with manual, it is operational. **HEATHKIT SB-620 Monitorscope**, has trace but no deflection so needs repair. Looking for good offers on this equipment. Will ship at your expense. VK6NE QTHR. Email vk6ne@upnaway.com.

WANTED TAS

• **Analogue mobile phones type Fujitsu Model F80M-364**. Require for parts only - Comms project. Any condition will be OK. Trevor VK7TB, 9 Norfolk St, Perth 7300, Tasmania. Phone 03 6398 2118 or email cabriggs@optusnet.com.au

MISCELLANEOUS

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel. (03) 9728 5350

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The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. There is one councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcast schedules and subscription rates. All enquiries should be directed to your local Division.

VK1 Division Australian Capital Territory,
GPO Box 600, Canberra ACT 2601

President	Alan Hawes	VK1WX
Secretary	Deane Walkington	VK1DW
Treasurer	Linden Orr	VK1LSO

Broadcast schedules **All frequencies MHz. All times are local.**

VK1WI transmits each Thursday evening at 2000 hrs local time on VK1RGI 146.950 MHz and 438.375 MHz including the linked repeater system on VK2RGN Goulburn, VK2RHR High Range, VK2RMP Madden Plains and VK2RTW Wagga Wagga. VK1 Home Page *http://www.vk1.wia.ampr.org*

Annual Membership Fees. Full $80.00 Pensioner or student $71.00. Without *Amateur Radio* $48.00

VK2 Division New South Wales
109 Wigram St, Parramatta NSW
(PO Box 432, Harris Park, 2150)
(Office hours Tue., Thu., Fri., 1100 to 1400 hrs.)
Phone 02 9689 2417
Web: *http://www.wiansw.org.au*
Freecall 1800 817 644
e-mail: *vk2wi@ozemail.com.au*
Fax 02 9633 1525

President	Terry Davies	VK2KDK
Secretary	Owen Holmwood	VK2AEJ
Treasurer	Chris Minahan	VK2EJ

VK2WI transmits every Sunday at 1000 hrs and 1930 hrs on some or all of the following frequencies (MHz): 1.845, 3.595, 7.146, 10.125, 14.170, 18.120, 21.170, 24.950, 28.320, 29.170, 52.150, 52.525, 144.150, 147.000, 432.150, 438.525, 1273.500. Plus many country regions on 2m and 70cm repeaters. Highlights are included in VK2AWX Newcastle news Monday 1930hrs. on 3.593 , 10 metres and local repeaters. The text of the bulletins is available on the Divisional website and packet radio. Continuous slow morse transmissions are provided on 3.699 and 145.650. VK2RSY beacons on 10m, 6m, 2m, 70cm and 23cm. Packet on 144.850.

Annual Membership Fees. Full $80.00 Pensioner or student $63.00. Without *Amateur Radio* $50.00

VK3 Division Victoria
40G Victory Boulevard Ashburton VIC 3147
(Office hours Tue 10.00 -2.30)
Phone 03 9885 9261
Web: *http://www.wiavic.org.au*
Fax 03 9885 9298
e-mail: *wiavic@wiavic.org.au*

President	Jim Linton	VK3PC
Secretary	John Brown	VK3JJB
Treasurer	Jim Baxter	VK3DBQ

VK3BWI broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web Site.

Annual Membership Fees. Full $83.00 Pensioner or student $67.00. Without *Amateur Radio* $51.00

VK4 Division Queensland
PO Box 199, Wavell Heights, Qld. 4012
Phone 07 3221 9377
e-mail: *office@wiaq.powerup.com.au*
Fax 07 3266 4929
Web: *http://www.wia.org.au/vk4*

President	Ewan McLeod	VK4ERM
Secretary	Bob Cumming	VK4YBN
Treasurer	Bill McDermott	VK4AZM

EVERY SUNDAY, at 9am LOCAL (Sat 2300 UTC). From Far North Queensland On 7.070/2 MHz. From South East Queensland:- 1.825, 3.605, 7.118, 10.135, 14.342, 21.175, 52.525, 147.000, 438.500 MHz. Right throughout VK4 scan 146.6 to 148.0 MHz again at 9am local. SUNDAY 6:45pm hear LAST week's QNEWS broadcast 3.605 and 147.0 MHz from South East Queensland. MONDAY 7:00pm hear YESTERDAY's news again on 146.875 MHz broadcast from Brisbanes Bayside repeater, and then 7:30pm on 3.605 and 147.0 MHz from Sth East Queensland. Text editions on packet internet and personal email, visit www.wia.org.au/vk4 News is updated 24/7 in both text and audio on this site. MP3 Audio from same website by 2300 hours each Saturday. Contact QNEWS, packet sp QNEWS@VK4WIE.BNE.QLD.AUS.OC email qnews@wia.org.au

Annual Membership Fees. Full $95.00 Pensioner or student $81.00. Without *Amateur Radio* $69.00

VK5 Division South Australia and Northern Territory
(GPO Box 1234 Adelaide SA 5001)
Phone 08 8294 2992
web:*http://www.sant.wia.org.au*
email: *peter.reichelt@bigpond.com*

President	Trevor Quick	VK5ATQ
Secretary	Peter Reichelt	VK5APR
Treasurer	Trevor Quick	VK5ATQ

VK5WI: 1843 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 LSB, 7.065 LSB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.

Annual Membership Fees. Full $88.00 Pensioner or student $73.00. Without *Amateur Radio* $58.00

VK6 Division Western Australia
PO Box 10 West Perth WA 6872
Phone 08 9351 8873
Web: *http://www.wia.org.au/vk6*
e-mail: *vk6@wia.org.au*

President	Neil Penfold	VK6NE
Secretary	Roy Watkins	VK6XV
Treasurer	Bruce Hedland-Thomas	VK6OO

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Real Audio" format from the VK6 WIA website

Annual Membership Fees. Full $71.00 Pensioner or student $65.00. Without *Amateur Radio* $39.00

VK7 Division Tasmania
PO Box 371 Hobart TAS 7001
Phone 03 6234 3553 (BH)
Web: *http://www.wia.org.au/vk7*
email: *vk7dg@useoz..com*

President	Phil Corby	VK7ZAX
Secretary	Dale Barnes	VK7DG
Treasurer	Dale Barnes	VK7DG

VK7WI: At 0930 hrs every Sunday on 146.700 MHz FM (VK7RHT, Hobart) and relayed on 147.000 MHz FM (VK7RAA, Launceston), 146.625 MHz FM (VK7RMD, Ulverstone), 146.750 MHz FM (VK7RNW, Ulverstone), 147.075 MHz FM (VK7RWC, Rosebery), 3.57 MHz LSB, 7.090 MHz LSB, 14.130 MHz USB and UHF CB Channel 15 in Hobart area.

Annual Membership Fees. Full $90.00 Pensioner or student $77.00. Without *Amateur Radio* $57.00

VK8 Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz. The broadcast is downloaded via the Internet.

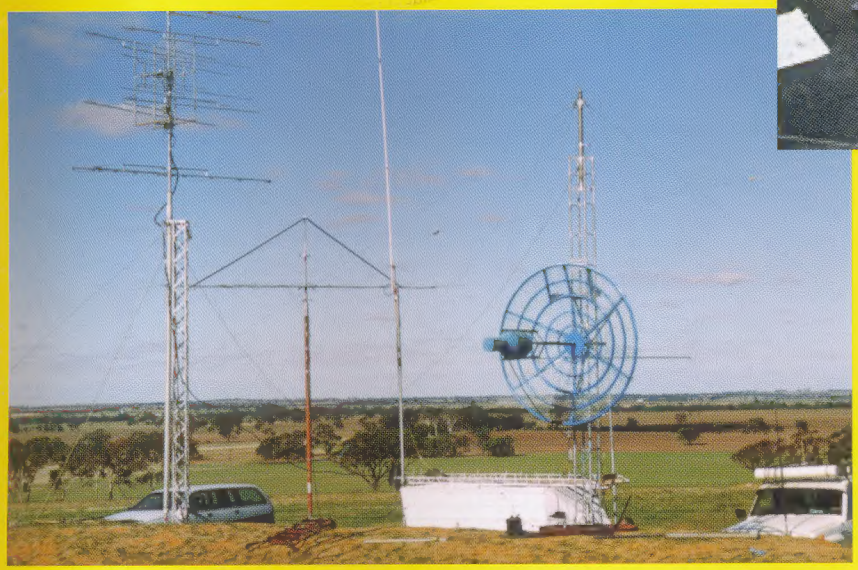
John Moyle Field Day

Living under canvas

Some are still looking for their "living under canvas allowance" Summerland ARC. Carl VK2 XL and Rod VK2HRW at Mt McKenzie.

Youth on the air

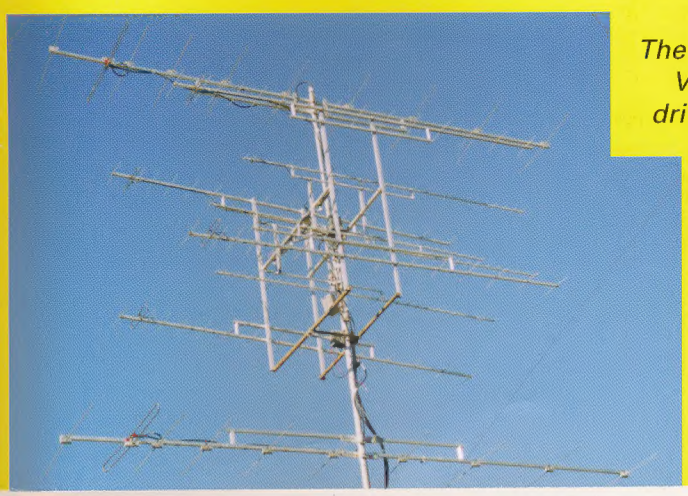
Townsville ARC started 'em young and took advantage of all the 'mod cons' offered by a friendly Scout hall. At Bluewater Terri Johnson with daughters Sarah, Rose Marie and Mary Ann



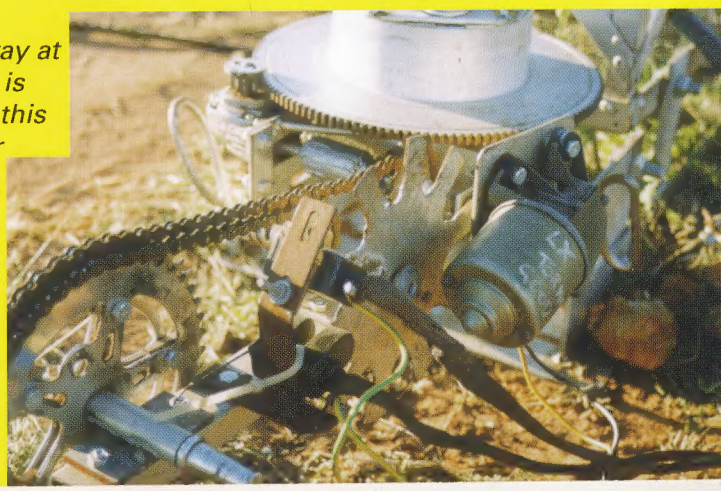
"The road to Nhill"

The site of VK3AEF at Tarranginnie near Nhill. with antennae in 'plain' view. As Jim VK3AEF says, with some understatement, "There's not a lot sticks up very far in the air around here".

It certainly would rotate you



The big array at VK3AEF is driven by this rotator



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